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REVISION 1

SUMMARY REPORT
July 2020 to June 2021
Quarterly PFAS Water Sampling
GUSTAVUS, ALASKA



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Submitted To: Alaska Department of Transportation & Public Facilities
2301 Peger Road
Fairbanks, AK 99709
Attn: Marcus Zimmerman and Sammy Cummings

Subject: REVISION 1 SUMMARY REPORT, JULY 2020 TO JUNE 2021
QUARTERLY PFAS WATER SAMPLING, GUSTAVUS, ALASKA

Shannon & Wilson prepared this report and participated in this project as a consultant to the Alaska Department of Administration's Division of Risk Management (DRM) and Alaska Department of Transportation and Public Facilities (DOT&PF).

Shannon & Wilson's services were authorized by DRM under our letter titled *Confirmation of Authorization to Proceed with Environmental Support Services, Gustavus Airport PFAS Assessment, Gustavus, Alaska* dated August 23, 2018. Shannon & Wilson's services were authorized by DOT&PF under Professional Services Agreement Number 25-19-1-013, issued by the DOT&PF on December 19, 2018, and the following contract amendments:

- Amendment 35, NTP P5-1-2021a for quarterly residential monitoring in fiscal year (FY) 2021, and NTP P5-11a for quarterly monitoring well sampling in FY 2021.
- Amendment 40, NTP P5-13 for the FY 2021 annual groundwater monitoring report.

This report presents a summary of Shannon & Wilson's water-supply and monitoring well sampling and related services from July 2020 through June 2021.

Shannon & Wilson appreciates the opportunity to be of service to you on this project.



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ACRONYMS

| | |
|---------------|---|
| °C | degrees Celsius |
| 9CL-PF3ONS | 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid |
| 11CL-PF3OUdS | 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid |
| AAC | Alaska Administrative Code |
| AFFF | aqueous film-forming foam |
| bgs | below ground surface |
| BTEX | benzene, toluene, ethylbenzene, and xylenes |
| DEC | Alaska Department of Environmental Conservation |
| DO | dissolved oxygen |
| DONA or ADONA | 4,8-dioxa-3H-perfluorononanoic acid |
| DRO | diesel range organics |
| DOT&PF | Alaska Department of Transportation and Public Facilities |
| DRM | Alaska Department of Administration's Division of Risk Management |
| EPA | U.S. Environmental Protection Agency |
| Eurofins | Eurofins TestAmerica in West Sacramento, California |
| FY | fiscal year |
| GAC | granular activated carbon |
| GRO | gasoline range organics |
| GST | Gustavus Airport |
| HFPO-DA | hexafluoropropylene oxide dimer acid |
| LDRC | Laboratory Data Review Checklist |
| LHA | Lifetime Health Advisory |
| mg/L | milligrams per liter |
| mV | millivolts |
| N-EtFOSAA | N-ethyl perfluorooctane sulfonamidoacetic acid |
| ng/L | nanograms per liter |
| N-MeFOSAA | N-methyl perfluorooctane sulfonamidoacetic acid |
| NPS | National Park Service |
| PAH | polycyclic aromatic hydrocarbons |
| PFAS | per- and polyfluoroalkyl substances |
| PFBS | perfluorobutanesulfonic acid |
| PFDA | perfluorodecanoic acid |
| PFDoA | perfluorododecanoic acid |
| PFHpA | perfluoroheptanoic acid |
| PFHxA | perfluorohexanoic acid |
| PFHxS | perfluorohexanesulfonic acid |
| PFOA | perfluorooctanoic acid |
| PFOS | perfluorooctanesulfonic acid |

ACRONYMS

| | |
|---------------------|--|
| PFNA | perfluorononanoic acid |
| PFTeA | perfluorotetradecanoic acid |
| PFTrDA or PFTriA | perfluorotridecanoic acid |
| PFUnA | perfluoroundecanoic acid |
| POET | point-of-entry treatment system |
| PW-ID | private well identification |
| QA | quality assurance |
| QC | quality control |
| RRO | residual range organics |
| SGS | SGS North America, Inc. |
| Shannon & Wilson | Shannon & Wilson, Inc. |
| Trizma [®] | tris(hydroxymethyl)aminomethane buffer |
| VOC | volatile organic compound |
| WO | work order |
| µg/L | micrograms per liter |
| YSI | multiprobe water quality meter |

1 INTRODUCTION

Shannon & Wilson, Inc. (Shannon & Wilson) has prepared this report to document water-supply and monitoring well sampling and point-of-entry treatment (POET) system testing efforts near the Gustavus Airport (GST) in Gustavus, Alaska. This report covers project tasks completed in July 2020 through June 2021 for this ongoing project.

The GST is an active, Alaska Department of Environmental Conservation (DEC) listed contaminated site due to the presence of per- and polyfluoroalkyl substances (PFAS) in soil, groundwater, and surface water (File Number 1507.38.017, Hazard ID 26904).

This report was prepared for the Alaska Department of Transportation & Public Facilities (DOT&PF) and the Alaska Department of Risk Management (DRM) in accordance with the terms and conditions of Shannon & Wilson's contracts, relevant DEC guidance documents, and 18 Alaska Administrative Code (AAC) 75.335.

1.1 Purpose and Objectives

The purpose of the services described in this report was to evaluate the potential for human exposure to PFAS in groundwater near the GST. Shannon & Wilson's primary objective was to collect quarterly groundwater samples from monitoring wells, and quarterly and annual groundwater samples from water-supply wells meeting the monitoring criteria detailed in Section 1.5. Well search and sampling areas are shown in Figure 1. The fiscal year (FY) 2021 monitoring status of water-supply wells identified during our well search and sampling effort is shown in Figure 2.

Our secondary objective was to collect groundwater samples from water-supply wells within the well search areas that were newly installed or were not yet sampled during previous sampling efforts.

1.2 Background

The GST terminal is located at 1 Airport Way in Gustavus, Alaska (Figure 1). The property is owned by the DOT&PF, who also owns multiple adjacent parcels. The geographic coordinates of the GST terminal are latitude 58.4252, longitude -135.7074.

The DOT&PF Crash and Fire Rescue program used aqueous film-forming foam (AFFF) for training, annual fire apparatus testing, and emergency response at the GST for many years. AFFF release areas are shown in Figure 1. The precise timeline of AFFF use at the GST is unknown, and it is possible additional areas of AFFF use have not been identified. AFFF

contains PFAS, a category of persistent organic compounds. There is evidence that exposure to PFAS can lead to adverse health effects.

On May 4, 2018, DEC informed DOT&PF the airport terminal well and National Park Service (NPS) Water System well serving the school were at risk for PFAS contamination. On June 27, 2018, DOT&PF sampled both drinking-water-supply wells for the presence of PFAS. The analytical results were received on July 30, 2018. The airport terminal well contained levels of PFAS exceeding the U.S. Environmental Protection Agency's (EPA's) Lifetime Health Advisory (LHA) level. The NPS well had detections of several PFAS less than the EPA's LHA level. DOT&PF and DRM contacted Shannon & Wilson regarding the Gustavus community well results. Shannon & Wilson began water-supply well search and sampling efforts in August 2018. Results from the initial sampling event is summarized in our April 2019 report, *August 2018 to November 2018 Private Well Sampling-Revision 1*.

Shannon & Wilson has sampled 121 water-supply wells for PFAS on and around the GST since 2018. Figure 1 shows the extent of the overall well search and sampling effort. PFAS were identified in several water-supply wells at concentrations exceeding the EPA LHA. Well search and sampling areas were expanded until PFAS concentrations in wells along the edges of the sampling area were found to be below the applicable DEC regulatory levels. Shannon & Wilson personnel conducted additional well search efforts in October, November, and December 2018.

Water-supply well sample concentrations for the sum of perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) ranged from not detected to 6,110 nanograms per liter (ng/L) for wells associated with the GST PFAS project. Water-supply well depths are generally between 15 to 25 feet below ground surface (bgs) based on information provided by the residents and the former, local driller who installed most of the wells. Shannon & Wilson was not able to obtain well-drilling or construction logs to confirm these depths.

Through coordination with the DOT&PF and DEC, Shannon & Wilson established the well monitoring network criteria defined in Section 1.5. Quarterly water-supply well monitoring began in March 2019. Annual monitoring began in June 2019. Water-supply sampling events conducted between December 2018 and November 2019 are presented in our report *Summary Report, December 2018 to November 2019 Water Supply Sampling*, dated August 2020. The sampling events for the first and second quarter of 2020 were canceled due to COVID-19 travel restrictions. Quarterly and annual sampling conducted between July 2020 and June 2021 is covered in this report.

1.3 Geology and Hydrology

The GST sampling area lies in a glacial outwash plain. The plain is bounded by the Chilkat Mountain Range to the northeast, Glacier Bay to the northwest and Icy Strait to the south.

Our knowledge of subsurface geology and hydrology in the investigation area is based on observations Shannon & Wilson made during the 2019 and 2021 site characterization drilling activities and information provided to us by a local well driller. Our investigation noted the sampling area is mostly comprised of fluvial and marine sediments. The soil profile generally consists of water-bearing, interbedded sand and silt underlain by a silty clay or clay layer. The clay layer was observed at varying depths ranging from approximately 13 to 45 feet bgs during the 2019 site characterization activities.

1.4 Contaminants of Concern and Action Levels

The primary contaminants of concern are PFOS and PFOA. The DEC groundwater-cleanup level for PFOS and PFOA is 400 ng/L for the individual compounds. These levels were promulgated in on November 6, 2016. However, the current DEC action level for drinking water aligns with the EPA's LHA level of 70 ng/L for the sum of PFOS and PFOA. The LHA was published in May 2016. This threshold is the current action level for drinking water in accordance with DEC's April 9, 2019 Technical Memorandum, titled *Action Levels for PFAS in Water and Guidance on Sampling Groundwater and Drinking Water*. From August 2018 to April 2019 the State of Alaska enforced a different action level for drinking water. Please refer to our *Summary Report, December 2018 to November 2019 Water-supply Well Sampling* for more details. Additional contaminants of concern include petroleum compounds for the monitoring wells onsite at the GST and arsenic for the POET system installed at the Gustavus Inn. The current action levels, in accordance with *DEC 18 AAC 75.345, Table C*, are shown in Exhibit 1-1 below.

Exhibit 1-1: Applicable Regulatory Action Levels

| Media | Compound | Level |
|----------------|-------------|----------------------|
| Drinking water | PFOS + PFOA | 70 ng/L |
| Groundwater | PFOS | 400 ng/L |
| Groundwater | PFOA | 400 ng/L |
| Drinking Water | Arsenic | 10 µg/L ^a |
| Groundwater | Petroleum | Varies by analyte |

Notes:

^a EPA's drinking-water maximum contaminant level.

µg/L= micrograms per liter; ng/L = nanograms per liter; PFOA= perfluorooctanoic acid; PFOS = perfluorooctanesulfonic acid

On October 2, 2019, DEC published an updated Technical Memorandum requesting samples be submitted for additional PFAS analytes. Water samples collected during the sampling events summarized in this report were submitted for the following 18 PFAS analytes via EPA Method 537.1 or 537.1M.

Exhibit 1-2: Reported PFAS Analytes

| | EPA 537.1 PFAS Analytes |
|--------------------------------------|---|
| PFOS | perfluorotetradecanoic acid (PFTeA) |
| PFOA | perfluorotridecanoic acid (PFTriDA or PFTriA) |
| Perfluoroheptanoic acid (PFHpA) | perfluoroundecanoic acid (PFUnA) |
| Perfluorononanoic acid (PFNA) | hexafluoropropylene oxide dimer acid (HFPO-DA) |
| Perfluorohexanesulfonic acid (PFHxS) | N-ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) |
| perfluorobutanesulfonic acid (PFBS) | N-methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) |
| perfluorodecanoic acid (PFDA) | 11-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUdS) |
| perfluorododecanoic acid (PFDoA) | 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS) |
| perfluorohexanoic acid (PFHxA) | 4,8-dioxa-3H-perfluorononanoic acid (DONA or ADONA) |

1.5 Scope of Services

Our scope summarized in this report includes four water-supply and monitoring well sampling events, additional water-supply well samples collected in response to flooding in December 2020, and quarterly sampling and maintenance of the Gustavus Inn POET system. This scope is outlined in our *DOT&PF Statewide PFAS Addendum 002-GST-00 Gustavus Well Monitoring* (work plan).

Water-supply well monitoring events included category 1 or 2 water-supply wells. Well categories are designated based on well use reported by the property owner or resident.

Category 1: wells used for drinking or cooking, as reported by owners or occupants.

Category 2: wells used for dish washing and other domestic purposes.

Category 3: wells used for vegetable-garden irrigation and are not plumbed to indoor faucets or spigots. The well water is accessed by outdoor plumbing, but the well may be located underneath or inside the structure. These wells are considered non drinking-water wells.

Category 4: wells used for outdoor purposes only, such as irrigation of lawns or non-vegetable gardens or vehicle washing. These wells are considered non drinking-water wells.

Category 5: wells currently not in use. Wells that have been abandoned in place, are inoperable, disconnected, or intended for future use, are considered category 5 wells. These wells are considered non drinking-water-wells.

The annual water-supply well sampling event occurred in August/September 2020. The quarterly sampling events were conducted in December 2020, March 2021, and June 2021. In addition, six first-time water-supply well samples were collected from July 2020 to June 2021. Please note this project is ongoing. Shannon & Wilson collected analytical groundwater samples for determination of 18 PFAS (Exhibit 1-2) from category 1 or 2 water-supply wells that either had not been sampled during a previous sampling event, or met the following sampling criteria:

- samples were collected quarterly for active wells whose maximum combined PFOS and PFOA concentration is between 35 ng/L and 69 ng/L (50 and 100 percent of the LHA), per DEC guidance;
- samples were collected annually for active wells whose maximum combined PFOS and PFOA concentration is between 17.5 ng/L and 35 ng/L (25 and 50 percent of the LHA), per DEC guidance; and
- active wells within 500 lateral feet of a water-supply or monitoring well meeting the quarterly or annual sampling criteria, based on the event (quarterly or annual).

Lateral distance is measured from the parcel location global positioning system point; these points were collected during the initial well search. These points are generally located at the structure served by the well and may not reflect the water-supply well's actual location.

Per DEC guidance, locations that are considered "affected" (historical concentration exceeds the LHA or former DEC action limit) are not included in the quarterly or annual water-supply well monitoring events.

This report was prepared for the exclusive use of the DOT&PF and its representatives. This work presents Shannon & Wilson's professional judgment as to the conditions of the site. Information presented here is based on the sampling and analyses field staff performed. This report should not be used for other purposes without Shannon & Wilson's approval or if any of the following occurs:

- Project details change, or new information becomes available, such as revised regulatory levels or the discovery of additional source areas.

- Conditions change due to natural forces or human activity at, under, or adjacent to the project site.
- Assumptions stated in this report have changed.
- If the site ownership or land use has changed.
- Regulations, laws, or cleanup levels change.
- If the site's regulatory status has changed.

If any of these occur, Shannon & Wilson should be retained to review the applicability of recommendations. This report should not be used for other purposes without Shannon & Wilson's review. If a service is not specifically indicated in this report, do not assume it was performed.

2 FIELD ACTIVITIES

This section summarizes field activities performed from July 2020 through June 2021. Travel was conducted in accordance with state guidelines, City of Gustavus policies, and Shannon & Wilson's Site-Specific Health and Safety Plan, including the addition of COVID-19 protocols for sampling at private residences.

Shannon & Wilson personnel who collected analytical water samples for this project are State of Alaska Qualified Environmental Professionals as defined in 18 AAC 75.333[b]. Copies of our *Private Well Sampling Logs*, *Monitoring Well Sampling Logs*, and *Private Well Inventory Survey Forms* for samples and information collected during the reporting period are included in Appendix A.

2.1 Monitoring Well Sampling

Shannon & Wilson collected 15 primary groundwater and two or three field duplicates each quarter from the monitoring well network (monitoring wells MW-1 through MW-12). These wells were installed in October 2019 during site characterization activities. Monitoring well locations are shown on Figure 3.

Prior to sample collection, field staff purged monitoring wells using a peri-pump or



Exhibit 2-1. Location of nest, MW-2; adjacent to City Hall.

submersible pump and new, disposable PFAS-free tubing. The following parameters were measured using a YSI multiprobe water quality meter (YSI). Readings were recorded for the following parameters: temperature in degrees Celsius (°C), pH, conductivity in microSiemens, dissolved oxygen (DO) in milligrams per liter (mg/L), and redox potential in millivolts (mV). Parameters were recorded approximately once every three minutes until sample collection. The following values were used to indicate stability for a minimum of three consecutive readings: ±0.1 pH, ±3 percent °C, ±10 percent DO, ±3 percent conductivity, and ±10 mV redox. Samples were collected into laboratory-supplied bottles following parameter stabilization, or after three well volumes were purged.

Shannon & Wilson submitted groundwater samples collected from each monitoring well for analysis of 18 PFAS via EPA Method 537.1. Per DEC guidance, samples were also collected for petroleum compounds for monitoring wells MW-11-15 and MW-12-10. Sampling logs are included in Appendix A.

Shannon & Wilson discharged purge water to five-gallon buckets and treated purge water with granular activated carbon (GAC) before discharging to the ground surface.

Monitoring well descriptions are presented in Exhibit 2-2, below.

Exhibit 2-2: Quarterly Monitoring Well Network Summary

| Monitoring Well | Location Description |
|-----------------|---|
| MW-1-15 | Bill's Drive, south of Gustavus Road |
| MW-1-40 | |
| MW-2-20 | Adjacent to City Hall, west of Salmon River |
| MW-2-30 | |
| MW-3-15 | South shoulder of Gustavus Road in front of Gustavus Community Center |
| MW-3-40 | |
| MW-4-20 | At a bend in Same Old Road |
| MW-5-20 | North shoulder of Gustavus Road, across from Glen's Ditch Road |
| MW-6-20 | End of White Drive |
| MW-7-20 | Moose Lane, near the Airport Terminal well |
| MW-8-20 | South shoulder of Parker Drive, near intersection with Wilson Road |
| MW-9-30 | East shoulder of Wilson Road |
| MW-10-20 | East shoulder of Wilson Road across from Faraway Road |
| MW-11-15 | Inside fence of the GST |
| MW-12-10 | |

2.2 Water-supply Well Sampling

Shannon & Wilson collected 70 primary and 14 field duplicates water-supply well samples from 35 water-supply wells during FY 2021. Water-supply well and POET system samples collected from the Gustavus Inn POET are not included in these totals. Gustavus Inn POET sampling is described in Section 2.3.

Shannon & Wilson purged water-supply well systems prior to sampling by allowing the water to run until water-quality parameters stabilized and the water appeared clear. We measured these parameters using a YSI and recorded pH, temperature, and conductivity approximately once every three minutes until sample collection. The following values were used to indicate stability for a minimum of three consecutive readings: ± 0.1 pH, ± 0.5 °C, and ± 3 percent conductivity. Purge water was discharged to an indoor sink or the ground surface. We note that indoor plumbing in the GST well search area generally leads to private septic systems.

Following parameter stabilization, field staff collected PFAS groundwater samples into laboratory-supplied sample bottles. Water-supply well samples were preserved with tris(hydroxymethyl)aminomethane buffer (Trizma®), per the laboratories standard operating procedure for drinking-water samples. Field staff collected water-supply well samples from sampling locations within the location's plumbing system, upstream of water-treatment systems or water softeners. For the purposes of this project, we do not consider small (i.e., less than 18 inches in height) particulate filters to be treatment systems. Copies of the *Residential Well Sampling Logs* are included in Appendix A.

Field staff are aware of the potential for cross-contamination from numerous everyday household items. Precautions to prevent cross-contamination included discontinuing the use of personal protective equipment and field supplies known to contain PFAS, using liner bags to contain samples before and after sample collection, hand washing, and donning a fresh pair of disposable nitrile gloves before sample collection.

2.2.1 Quarterly and Annual Monitoring

Quarterly and annual water-supply well sampling criteria is described in Section 1.5. The sampling status of each water-supply well is shown in Figure 2. In August and September 2020, Shannon & Wilson field staff collected samples from 14 of the 16 quarterly monitoring locations and nine of the 15 annual monitoring locations. In December 2020 staff collected samples from 11 of 15 quarterly monitoring locations and one annual location. In March

2021 staff collected samples from 12 of 15 quarterly monitoring locations and one annual location. During the June 2021 event, Shannon & Wilson sampled 15 of 15 quarterly monitoring locations.

These sampling events are summarized in Exhibit 2-3 below. Homes and businesses marked "No" indicate the owner or occupant declined sampling, or Shannon & Wilson was unable to reach the property contact. Property owners more commonly declined sampling in the winter and spring sampling events when many properties are winterized. Annual sampling was conducted in fall 2020 or during the next available sampling event. Shannon & Wilson intends to collect annual samples in the summer for future sampling events, in an attempt to collect samples from seasonal locations.

Exhibit 2-3: Quarterly and Annual Location Summary

| Sample Name | Description | Fall 2020 | Winter 2020 | Spring 2021 | Summer 2021 |
|----------------------------|---|-----------|-------------|-------------|-------------|
| <i>NPS Well / PW-1001*</i> | National Park Service housing & Gustavus School | Yes | -- | Yes ¥ | -- |
| <i>PW-010</i> | [REDACTED] | Yes | Yes | Yes | Yes |
| <i>PW-012</i> | [REDACTED] | Yes | Yes | Yes | Yes |
| <i>PW-032*</i> | [REDACTED] | Yes | -- | -- | -- |
| <i>PW-037</i> | [REDACTED] | Yes | Yes | Yes | Yes |
| <i>PW-038</i> | [REDACTED] | Yes | Yes | Yes | Yes |
| <i>PW-039</i> | [REDACTED] | Yes | Yes | Yes | Yes |
| <i>PW-040</i> | [REDACTED] | Yes | Yes | Yes | Yes |
| <i>PW-047*</i> | [REDACTED] | No | -- | -- | -- |
| <i>PW-059</i> | [REDACTED] | Yes | Yes | Yes | Yes |
| <i>PW-061*</i> | [REDACTED] | Yes | -- | -- | -- |
| <i>PW-074*</i> | [REDACTED] | No | -- | -- | -- |
| <i>PW-203</i> | [REDACTED] | Yes | Yes | Yes | Yes |
| <i>PW-204 (removed)</i> | [REDACTED] | Yes | No | -- | -- |
| <i>PW-204.1 (new)</i> | [REDACTED] | -- | -- | No | Yes ‡ |
| <i>PW-205.1 (new)</i> | [REDACTED] | -- | -- | -- | Yes ‡ |
| <i>PW-207*</i> | [REDACTED] | No | -- | -- | -- |
| <i>PW-208 (removed)</i> | [REDACTED] | No | No | Yes | -- |
| <i>PW-208.1† (new)</i> | [REDACTED] | -- | -- | -- | Yes ‡ |
| <i>PW-211</i> | [REDACTED] | Yes | Yes | Yes | Yes |
| <i>PW-212*</i> | [REDACTED] | Yes | -- | -- | -- |
| <i>PW-213*</i> | [REDACTED] | Yes † | -- | -- | -- |
| <i>PW-218*</i> | [REDACTED] | No | Yes | -- | -- |
| <i>PW-219*</i> | [REDACTED] | Yes | -- | -- | -- |
| <i>PW-221</i> | [REDACTED] | Yes | Yes | Yes | Yes |
| <i>PW-230*</i> | [REDACTED] | Yes | -- | -- | -- |
| <i>PW-240*</i> | [REDACTED] | Yes | -- | -- | -- |
| <i>PW-241*</i> | [REDACTED] | No | -- | -- | -- |
| <i>PW-401</i> | [REDACTED] | Yes | Yes | Yes | Yes |
| <i>PW-414*</i> | [REDACTED] | Yes | -- | -- | -- |
| <i>PW-419</i> | [REDACTED] | Yes | No | No | Yes |
| <i>PW-438*</i> | [REDACTED] | Yes | -- | -- | -- |
| <i>PW-462**</i> | [REDACTED] | Yes | -- | -- | -- |

Notes:

*=annual sample; **=removed from network due to well category; †=exceeded regulatory levels, removed from monitoring network; ‡=first-time sample; ¥=sampled at request of DEC.

2.2.2 First-Time Samples

Shannon & Wilson field staff revisited locations we were unable to sample or reach during previous mobilizations during each water-supply well sampling event. Locations where more than five attempts have been made to contact owners are no longer being visited. We consider these locations to be passive refusals.

In March 2021, Shannon & Wilson collected a sample from the well at the northwest corner of White Drive and Wilson Road (PW-465). This property contains two wells, one for the main home (PW-415) and one servicing the guest houses (PW-465). The guest houses are being restored by the new property owners.

In June 2021, Shannon & Wilson collected a sample from the water-supply well at the end of Glen's Ditch Road (PW-062). Previous contact had been made with the owner of this property; however, the owner uses the property as a vacation home and was not available during prior sampling events.

In June 2021, Shannon & Wilson collected first-time samples from three properties where the previous well had been replaced with a new water-supply well. We denote the new wells using the original private well identification (PW-ID) followed by a "." and counting consecutively. The following new wells were sampled during the reporting period: PW-204.1, PW-205.1, and PW-208.1.

2.2.3 December 2020 Flood Response Samples

In December 2020, Gustavus experienced a period of rainfall that caused flooding in the neighborhoods near the GST. In response to numerous requests from residents concerned that the flooding may have facilitated migration of PFAS into new areas, DEC and DOT&PF requested Shannon & Wilson collect additional water-supply well samples from properties in areas that may have been impacted by PFAS transport in flood waters. The following flood-response samples were collected during the December 2020/January 2021 sampling event:

- *NPS Well* – also sampled annually as part of the water-supply well monitoring;
- *PW-016* - previously sampled in August 2018;
- *PW-045* - previously sampled in August 2018 and October 2019. Note: this property was unable to be sampled as part of the flood response until June 2021, as the owners are seasonal residents;
- *PW-235* - previously sampled in November 2018; and

- *PW-466* - first-time water sample from a water-supply well located at the corner of Wilson Road and Chuck Kearns Drive.

2.2.4 Notification of Results

Shannon & Wilson notified property owners and occupants following the receipt of analytical data. Owners and/or occupants were first contacted by telephone, where possible. We also prepared letters interpreting the results of the relevant water-supply well sample(s). When requested, results letters were e-mailed to owners and occupants.

Letters were tailored to each property and analytical sample and included the following information:

- sample name(s);
- comparison of PFOS and PFOA analytical results to the EPA LHA level;
- description of the project;
- pages of the laboratory report that apply to the water-well sample; and
- updated GST PFAS fact sheet.

A copy of the result letter template is included in Appendix B.

2.2.5 Public Information

The DOT&PF hosts a webpage describing the PFAS water-testing project. The webpage includes a project summary, list of contacts, a results map, and links to additional resources. The map is updated as analytical results are received and uploaded to the webpage by DOT&PF.

2.3 Point-of-Entry Treatment System Monitoring

Shannon & Wilson collected samples from the POET system installed at the Gustavus Inn. The POET system is designed to remove PFAS and arsenic from the drinking-water associated with water-supply well PW-200. Water samples were collected following parameter stabilization as described in section 2.2. Quarterly samples were collected during the reporting period from the following locations in the treatment system:

- *PW-200-Sink*: collected from a post-treatment sink or spigot, generally collected from the sink in the garage. This sample is submitted for PFAS and arsenic analysis.
- *PW-200-C Port Composite*: collected from the mid-system C-port of each of the four parallel treatment units. This composite sample is submitted for PFAS analysis.

- *PW-200-Unit C-port*: collected from the mid-system C-port of each of the four parallel treatment units. These individual samples are submitted for PFAS analysis; however, the sample is not analyzed unless PFAS is detected in the composite sample listed above. These samples were not analyzed during the reporting period.
- *PW-200-F-port*: collected from the F-port located immediately after the treatment system, prior to entering indoor plumbing. This sample is submitted for PFAS and arsenic analysis; however, the sample is not analyzed unless results from the other ports indicate PFAS and/or arsenic in the treated water. This sample was not analyzed during the reporting period.
- *PW-200*: collected from the raw-water spigot, usually the A-port or the pressure tank spigot. This sample is submitted for PFAS and arsenic analysis.

2.4 Sample Custody, Storage, and Transport

Immediately after collection, the PFAS sample bottles for each location were placed in Ziploc bags and stored in a designated sample cooler or refrigerator maintained between 0 °C and 6 °C with ice substitute separated from the sample bottles by a liner bag. Samples submitted for additional analyses were also stored in the temperature-controlled cooler; however, the requirement to bag the samples and ice separately is not needed.

Shannon & Wilson maintained custody of the samples until submitting them to the laboratories for analysis. Analytical samples and chain-of-custody forms were packaged in a hard-plastic cooler with an adequate quantity of frozen-ice substitute and packing materials to prevent bottle breakage during shipments. Staff applied custody seals to the cooler, which were observed to be intact upon receipt by the laboratory.

Shannon & Wilson shipped the sample coolers to Eurofins TestAmerica in West Sacramento, California (Eurofins) for analysis of PFAS using Alaska Air Cargo's priority overnight service known as Goldstreak. Shannon & Wilson shipped or hand-delivered sample coolers to SGS North America, Inc. (SGS) in Alaska for analysis of petroleum and arsenic analytes.

Shannon & Wilson submitted water samples promptly to the analytical laboratories after each sampling event. This allowed sufficient time for the laboratories to analyze the samples within the holding-time requirements.

2.5 Deviations

In general, Shannon & Wilson conducted services in accordance with the approved proposals and approved work plan addendum. The following are deviations from the proposed scope of services described in Section 1.5.

- Sample *PW-012* was collected from a location downstream of the property's water softener or other in-home treatment system during one or more sampling events.
- Due to an YSI malfunction, pH readings were not accurate during sampling of several monitoring wells in June 2021. The remaining parameters were stabilized prior to samples collection, and pH was approximated using pH paper; however, stabilization of pH for these samples is not assured. Inaccurate pH readings occurred for the following June 2021 monitoring well samples: *MW-5-20*, *MW-6-20*, *MW-7-20*, *MW-8-20*, *MW-9-30*, *MW-10-20*, *MW-11-15*, and *MW-12-10*.
- Sample *PW-462* was collected via a hand pump in September 2020, and parameters were not measured or recorded.
- Sample *PW-208* was collected in March 2021 using a peri-pump. The water-supply well was not connected to the home at the time.
- Sample *PW-205.1* was collected in June 2021 using a residential well pump intended to be used with indoor plumbing. The pump was connected to a PVC pipe for purging, the pipe could not be removed prior to sample collection.
- Sample *PW-208.1* was collected in June 2021 using a residential well pump intended to be used with indoor plumbing.
- Samples *MW-11-15* and *MW-12-10* submitted for the analysis of volatile organic compounds (VOCs) were collected using a peri-pump in Fall 2020, Winter 2020, and Spring 2021.

3 ANALYTICAL RESULTS

Shannon & Wilson submitted groundwater samples to Eurofins for analysis of 18 PFAS compounds using EPA Method 537.1. PFAS analytes are listed in Exhibit 1-2. Results of water-supply well and monitoring well samples were compared to the EPA LHA.

We submitted onsite monitoring well water samples (*MW-11-15* and *MW-12-10*) collected in August/September 2020 to SGS in Anchorage, Alaska for analysis of VOCs by method 8260C, gasoline range organics (GRO) by AK Method 101, diesel range organics (DRO) by AK Method 102, residual range organics (RRO) by AK Method 103, and polycyclic aromatic hydrocarbons (PAH) by EPA Method 8270D-SIM.

We submitted onsite monitoring samples collected in December 2020, March 2021, and June 2021 for benzene, toluene, ethylbenzene, and xylenes (BTEX) analysis by EPA Method 8260 instead of the full VOC analysis.

Water samples were also submitted to SGS for the analysis of arsenic by EPA 200.8 for the POET quarterly monitoring.

The Eurofins and SGS laboratory reports, associated DEC Laboratory Data Review Checklists (LDRCs), and a summary of our Quality Assurance/Quality Control (QA/QC) assessment are included in Appendix C. PFAS results for water-supply well and monitoring well samples collected July 2020 through June 2021 are shown in Tables 1 through 4 and Tables 5 through 8, respectively. Results of petroleum analyses from onsite monitoring wells are shown on Table 9. PFAS and arsenic results from samples collected from the Gustavus Inn POET system are shown on Table 10. The maximum PFOS+PFOA result for each sampling location as of August 2021 is depicted on Figure 4.

3.1 Water-supply Wells

The following sections summarize the water-supply well results associated with each FY 2021 sampling event.

3.1.1 Fall 2020

Table 1 summarizes concentrations of target PFAS analytes for August and September 2020 quarterly and annual water-supply well samples (Eurofins work order [WO] 320-64367-1). None of the samples collected had reported PFOS and PFOA concentrations above the EPA LHA. Analytical results for three wells exhibited combined PFOS and PFOA concentrations greater than 35 ng/L.

The sum of PFOS and PFOA was 69 ng/L in sample *PW-462*. This well exhibited the highest PFOS concentration for the fall 2020 sampling event. Note, the owners previously reported that they planned to develop this property, with the intention of using *PW-462* as a drinking water source. The property has not been developed since it was reported as a future water-supply well. This well is not currently used for indoor plumbing or drinking water and has been removed from the monitoring events.

3.1.2 Winter 2020

Table 2 summarizes concentrations of target PFAS analytes for December 2020 and January 2021 quarterly and first-time water-supply well samples (Eurofins WO 320-68521-1). None of the samples collected had reported PFOS and PFOA concentrations above the EPA LHA.

Analytical results for sample *PW-401* exhibited combined PFOS and PFOA concentrations of 31 ng/L. This well had the highest reported PFAS concentration for this sampling event. PFAS analytes were not detected in the first-time sample *PW-466*.

3.1.3 Spring 2021

Table 3 summarizes concentrations of target PFAS analytes for March 2021 quarterly and first-time water-supply well samples (Eurofins WO 320-71796-1).

Analytical results for first-time sample *PW-465* exhibited combined PFOS and PFOA concentrations above the LHA, reported at 119 ng/L. Analytical results for quarterly sample *PW-401* exhibited combined PFOS and PFOA concentrations of 31 ng/L.

3.1.4 Summer 2021

Table 4 summarizes concentrations of target PFAS analytes in June 2021 quarterly and first-time water-supply well samples (Eurofins WO 320-75575-1).

Analytical results for first-time sample *PW-208.1* exhibited combined PFOS and PFOA of 70 ng/L, equivalent to the LHA. This well is considered “affected” and is no longer part of the monitoring sampling events. Analytical results for first time samples *PW-062*, *PW-204.1*, and *PW-205.1* exhibited detections of PFAS less than the LHA.

3.1.5 Historical Results

Historical PFOS results for quarterly water-supply well samples collected between August 2018 and June 2021 are plotted in Figure D.1 (Appendix D). Locations with less than four detectable results of PFOS are excluded.

Select water-supply well locations with detections of multiple PFAS analytes in historical samples collected August 2018 through June 2021 are plotted in Figure D.2 through D.5.

3.2 Monitoring Wells

The following sections summarize the monitoring well results associated with each monitoring well sampling event.

3.2.1 Fall 2020

Table 5 summarizes concentrations of target PFAS analytes in August and September 2020 quarterly monitoring well samples (Eurofins WO 320-64368-1). Analytical results for the following monitoring well samples exhibited PFAS results above the LHA: *MW-2-20*, *MW-9-30*, *MW-10-20*, *MW-11-15*, and *MW-12-10*.

The sum of PFOS and PFOA was 296 ng/L in sample *MW-2-20*. This well exhibited the highest PFAS concentrations for this sampling event.

3.2.2 Winter 2020

Table 6 summarizes concentrations of target PFAS analytes in December 2020 and January 2021 quarterly monitoring well samples (Eurofins WO 320-68519-1). Analytical results for the following monitoring well samples exhibited PFAS results above the LHA: *MW-2-20*, *MW-9-30*, *MW-11-15*, and *MW-12-10*.

The sum of PFOS and PFOA was 6,192 ng/L in sample *MW-11-15*. This well exhibited the highest PFAS concentrations for this sampling event.

3.2.3 Spring 2021

Table 7 summarizes concentrations of target PFAS analytes in March 2021 quarterly monitoring well samples (Eurofins WO 320-71798-1). Analytical results for the following monitoring well samples exhibited PFAS results above the LHA: *MW-2-20*, *MW-9-30*, and *MW-11-15*.

The sum of PFOS and PFOA was 328 ng/L in sample *MW-2-20*. This well exhibited the highest PFAS concentrations for this sampling event.

3.2.4 Summer 2021

Table 8 summarizes concentrations of target PFAS analytes in June 2021 quarterly monitoring well samples (Eurofins WO 320-75574-1). Analytical results for the following monitoring well samples exhibited PFAS results above the LHA: *MW-2-20*, *MW-9-30*, *MW-10-20*, and *MW-11-15*.

The sum of PFOS and PFOA was 482 ng/L in sample *MW-2-20*. This well exhibited the highest PFAS concentrations for this sampling event.

3.2.5 Petroleum Analysis

Table 9 summarizes concentrations of target petroleum compounds from August 2020 through June 2021 monitoring well samples. None of the reported analytes were detected above the laboratory reporting limits for the analytical samples collected during the reporting period.

3.2.6 Historical Results

PFAS results for monitoring well samples collected August 2018 through June 2021 are plotted in Figures D.6 through D.14. Locations with less than 4 detectable results are excluded.

3.3 POET System Monitoring

Table 10 summarize concentrations of PFAS and arsenic analytes in samples associated with the POET system installed at the [REDACTED] (PW-200).

Analytical results for samples collected from untreated groundwater had reported concentrations of PFOS and PFOA above the LHA in the sample collected in August 2020. Combined PFOA and PFOA concentrations were less than the LHA in samples collected in December 2020, March 2021, and June 2021.

Analytical arsenic results exceeded regulatory limits in the untreated groundwater samples collected during each sampling events covered in this report.

Except for a low-level detection of PFOA in the August 2020 C-port composite sample, PFAS analytes were not detected in the treated water (sink) or C-port composite samples during each sampling event covered in this report.

4 DISCUSSION AND RECOMMENDATIONS

The following sections provide a detailed discussion of the results of quarterly water-supply and monitoring well sampling, and POET system testing performed July 2020 through June 2021. Observations and recommendations are based on available data and may be revised following future sampling events. We note that conclusions derived from small data sets may be prone to errors and inconsistencies.

4.1 Comparison to Regulatory Levels

Historical results for the water-supply well samples are provided as Table 11.

4.1.1 Water-supply Wells

Between July 2020 and June 2021, two first-time samples from water-supply wells had reported combined PFOS and PFOA concentrations above the drinking-water action level. The combined PFOS and PFOA concentration in sample *PW-208.1* was 70 ng/L during the summer 2021 sampling event (Table 4). This well was installed in March 2021, as a part of a renovation to an existing property. Previous samples collected from the original well on the property (PW-208) did not exceed the LHA. The combined PFOS and PFOA concentration in sample *PW-465* was 119 ng/L during the spring 2021 sampling event (Table 3). This well was historically used for guest houses located on the property. The well servicing the main home on this property exceeded the LHA in a previous sampling event. Locations where the

well concentration exceeds the LHA are receiving bottled water until a long-term alternative water solution is in place.

PFOS was frequently the highest detected PFAS analyte in the quarterly water-supply well samples collected during the events covered in this report.

4.1.2 Monitoring Wells

Between July 2020 and June 2021, 16 samples from groundwater monitoring wells had combined PFOS and PFOA concentrations above the LHA drinking-water action level. Of these, two samples had PFOS results above the DEC groundwater cleanup level of 400 ng/L. Sample *MW-11-15* collected in December 2020, exhibited a PFOS concentration of 6,100 ng/L (Table 6). Sample *MW-2-20* collected in June 2021 exhibited a PFOS concentration of 450 ng/L during the summer 2021 sampling event.

PFOS was frequently the highest detected PFAS analyte in the quarterly monitoring well samples collected during the events covered in this report.

4.2 Trend Analysis

Shannon & Wilson performed a statistical analysis on the PFAS data set to provide information regarding the potential future risk to receptors via drinking water exposure. We assessed temporal data for quarterly and/or annual water-supply and monitoring wells using a Mann-Kendall nonparametric trend analysis. Mann-Kendall analyzes for increasing or decreasing trends with a confidence above 95 percent.

We are unable to report a trend for locations where fewer than four sample results are available. Trends were analyzed for C4 PFBS, C5 PFHpA, C6 PFHxS, C6 PFHxA, C8 PFOS, C8 PFOA, and PFOS and PFOA combined values. We note these trends were calculated using between five and eight sampling events and are subject to change as more data are accumulated.

Professional judgement was used to interpret trends derived from data that included a mixture of non-detected results and estimated detections below the laboratory reporting limit. Our statistical analysis referenced the laboratory reporting limit for non-detected results. Trends were not derived from data sets with a mixture of detected and non-detected results where 50 percent or more of the data set was not detected. Trends are reported as stable for analytes with consistent non-detected PFAS results for the reported location.

4.2.1 Water-Supply Wells

Table 12 summarizes the statistical analysis data for the quarterly and/or annual water-supply well locations. There were no locations in the quarterly water-supply well monitoring network that exhibited statistically significant “increasing” trends for PFOS or PFOA (Table 12). However, we note that many of the water-supply wells with higher levels of PFAS have been omitted from statistical analysis for lack of monitoring data. Two water-supply well locations exhibit “possibly increasing” trends for other PFAS.

4.2.1.1 PFOS Trend Analysis

Water-supply wells where trend analysis was conducted did not exhibit a statistically significant increasing trend in PFOS concentrations. Sample results for locations NPS Well and PW-401 exhibited a “decreasing” trend in PFOS concentration. Concentrations of PFOS in locations PW-012 and PW-200 exhibited a “possibly decreasing” trend. PFOS results for locations PW-010, PW-037, PW-038, PW-039, PW-040 and PW-221 exhibited a “stable” trend with no significant change. We note that PFOS was not detected in samples collected from July 2020 through June 2021 for locations PW-037, PW-038, PW-039, and PW-040.

4.2.1.2 PFOA Trend Analysis

Water-supply wells where trend analysis was conducted did not exhibit a statistically significant increasing trend in PFOA concentrations. Sample results for locations NPS Well and PW-200 exhibited a “decreasing” trend in PFOA concentration. PFOA results for locations PW-010, PW-037, PW-038, PW-040, PW-221 and PW-401 exhibited a “stable” trend with no significant change. We note that PFOA was not detected in samples collected from July 2020 through Jun 2021 for locations PW-037, PW-038, PW-040 and PW-221.

4.2.1.3 PFOS and PFOA Combined Trend Analysis

Trends for combined PFOS and PFOA concentrations were analyzed for water-supply well locations with calculable LHA combined values. Locations with no detections of PFOS or PFOA were not analyzed.

Water-supply well location NPS Well exhibited statistically significant evidence of a “decreasing” trend. Locations PW-012, PW-200, and PW-401 exhibited a “possibly decreasing” trend. The trend for locations PW-010, PW-040, PW-221 was calculated as “stable” with no significant change.

4.2.2 Monitoring Wells

Table 13 summarizes the statistical analysis for the monitoring well network.

4.2.2.1 PFOS Trend Analysis

Monitoring wells MW-3-40 and MW-7-20 exhibited statistically significant “increasing” trends for PFOS for samples collected through June 2021. The PFOS trend associated with monitoring wells MW-2-20, MW-2-30, MW-4-20, MW-10-20, and MW-12-10 is reported as “stable” with no significant changes. PFOS concentrations in monitoring well MW-3-15 exhibited a statistically significant “decreasing” trend. A trend was unable to be calculated or “no trend” was reported for the remaining monitoring wells.

4.2.2.2 PFOA Trend Analysis

Statistical analysis of PFOA concentrations for the monitoring wells did not report “increasing” or “decreasing” trends for the monitoring wells. PFOA concentrations are reported as “no trend” or as “stable” with no significant changes.

4.2.2.3 PFOS and PFOA Combined Trend Analysis

Trends for combined PFOS and PFOA concentrations were analyzed for monitoring well locations with calculable combined values. Locations with no detections of PFOS or PFOA were not analyzed.

Monitoring wells MW-2-20, MW-3-40, MW-5-20, and MW-7-20 exhibited statistically significant evidence of an “increasing” trend for PFOS and PFOA combined and monitoring well MW-3-15 exhibited statistically significant evidence of a “decreasing” trend.

Notably the PFOS and PFOA results in monitoring well MW-11-15 near the former fire training area had a reported spike in concentration in the December 2020 sampling event. This is likely attributable to the significant rainfall received prior to the sampling event.

4.3 Recommendations

Based on the water-supply well search and sampling efforts completed between July 2020 and June 2021, Shannon & Wilson recommends the DOT&PF:

- discontinue collecting analytical samples for petroleum analytes at locations associated with monitoring wells MW-11 and MW-12;
- continue to conduct the annual water-supply well sampling event in the summer months due to scheduling considerations;
- following this report maps produced for the water-supply and monitoring well data should avoid depicting current data with historical data, as results may have changed and may not represent the current conditions;

- work with the DEC and Alaska Department of Health and Social Services to educate the public regarding the potential health effects of exposure to PFAS-containing water;
- provide the information for monitoring well MW-2-20 to DEC for the purpose of their investigation, given this well has an increasing trend and is likely associated with a secondary source;
- refrain from discharging PFAS-containing AFFF to the ground, surface water bodies, or groundwater during ARFF training and equipment testing;
- discuss with the DEC the sampling criteria described in Section 1.5 and potential upcoming changes to the regulations following EPA’s recent publications; and
- consider the following changes (Exhibit 4-1) to the water-supply well network’s monitoring frequency.

Exhibit 4-1: Proposed Water-Supply Well Monitoring Network

| Quarterly Location | Previous Sampling Frequency | Proposed Sampling Frequency | Reason |
|--------------------|-----------------------------|-----------------------------|---|
| PW-010 | Quarterly | Quarterly | Frequency not proposed to change |
| PW-012 | Quarterly | Semi-annual | “Possibly decreasing” trend |
| PW-037 | Quarterly | Annual | PFOS & PFOA consistently not detected |
| PW-038 | Quarterly | Annual | PFOS & PFOA consistently not detected |
| PW-039 | Quarterly | Annual | PFOS & PFOA consistently not detected |
| PW-040 | Quarterly | Annual | PFOS & PFOA consistently not detected |
| PW-059 | Quarterly | Quarterly | Frequency not proposed to change |
| PW-203 | Quarterly | Quarterly | Frequency not proposed to change |
| PW-204 | Quarterly | Removed | Well was replaced by owner |
| PW-204.1 | Quarterly | Quarterly | Limited data set for new location |
| PW-205.1 | Quarterly | Quarterly | Limited data set for new location |
| PW-208 | Quarterly | Removed | Well was replaced by owner. New well considered “affected” and also not part of monitoring network. |
| PW-211 | Quarterly | Semi-annual | Consistent PFAS results below reporting limit |
| PW-221 | Quarterly | Quarterly | Frequency not proposed to change |
| PW-401 | Quarterly | Quarterly | Frequency not proposed to change |
| PW-419 | Quarterly | Semi-annual | Seasonal well, access varies with seasonal weather variation |

The information included in this report is based on limited sampling and should be considered representative of the times and locations at which the sampling occurred. Regulatory agencies may reach different conclusions than Shannon & Wilson. "Important

Information about your Geotechnical/Environmental Report" has been prepared and is included, to assist you and others in understanding the use and limitations of this report.

5 REFERENCES

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Table 1 - Summary of August/September 2020 Water-Supply Well Analytical PFAS Results

| Analyte | Sample Name | | NPS Well | | PW-010 | PW-012 | | PW-032 | PW-037 | PW-038 | PW-039 | PW-040 |
|--|-------------|-------|----------|----------------|---------|----------|----------------|--------|--------|--------|--------|--------|
| | EPA LHA | Units | 9/2/2020 | 9/2/2020 (DUP) | | 9/3/2020 | 9/3/2020 (DUP) | | | | | |
| Perfluorohexanesulfonic acid (PFHxS) | - | ng/L | 7.3 | 7.4 | 0.60 J | 4.7 | 4.2 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| Perfluorohexanoic acid (PFHxA) | - | ng/L | 4.2 | 4.3 | <1.9 | 1.2 J | 1.1 J | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| Perfluorheptanoic acid (PFHpA) | - | ng/L | 1.5 J | 1.5 J | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| Perfluorononanoic acid (PFNA) | - | ng/L | <1.9 | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| Perfluorobutanesulfonic acid (PFBS) | - | ng/L | 0.85 J | 0.84 J | <1.9 | 0.50 J | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| Perfluorodecanoic acid (PFDA) | - | ng/L | <1.9 | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| Perfluoroundecanoic acid (PFUnA) | - | ng/L | <1.9 | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| Perfluorododecanoic acid (PFDoA) | - | ng/L | <1.9 | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| Perfluorotridecanoic acid (PFTrDA) | - | ng/L | <1.9 | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| Perfluorotetradecanoic acid (PFTeA) | - | ng/L | <1.9 | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | - | ng/L | <1.9 | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | - | ng/L | <1.9 | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| 9-Chloroheptadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | - | ng/L | <1.9 | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| 11-Chlorooctadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | - | ng/L | <1.9 | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| 4,8-Dioxo-3H-perfluorononanoic acid (DONA) | - | ng/L | <1.9 | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | - | ng/L | <1.9 | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| Perfluorooctanesulfonic acid (PFOS) | 70† | ng/L | 9.7 | 10 | 0.88 J | 15 | 14 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| Perfluorooctanoic acid (PFOA) | 70† | ng/L | 1.9 | 2.0 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 |
| LHA Combined (PFOS + PFOA) | 70† | ng/L | 12 | 12 | 0.88 J‡ | 15 ‡ | 14 ‡ | N/A | N/A | N/A | N/A | N/A |

Notes: Sample results reported in TestAmerica Work Order J64367-1

ng/L nanograms per liter, equivalent to parts per trillion

EPA Environmental Protection Agency

LHA Lifetime Health Advisory

† EPA LHA level is 70 ppt for PFOS and PFOA combined.

< Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

DUP Field-duplicate sample

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.

J* Result considered estimated due to a QC failure. Flag applied by Shannon & Wilson, Inc.

‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

N/A Not applicable. The combined concentration could not be calculated because PFOS and PFOA were not detected in the project sample.

Table 1 - Summary of August/September 2020 Water-Supply Well Analytical PFAS Results

| Analyte | Sample Name | | PW-059 | PW-061 | PW-203 | PW-204 | PW-211 | PW-212 | PW-213 | PW-219 | PW-221 |
|--|-------------|-------|----------|----------|-------------------|----------|-----------|-----------|----------|-----------|----------|
| | EPA LHA | Units | 9/1/2020 | 9/1/2020 | 9/1/2020 (DUP) | 9/2/2020 | 8/31/2020 | 8/31/2020 | 9/2/2020 | 8/31/2020 | 9/2/2020 |
| Perfluorohexanesulfonic acid (PFHxS) | - | ng/L | 0.78 J | 0.85 J | 0.81 J | 3.2 | <1.9 | <1.9 | 17 | <1.9 | 0.86 J |
| Perfluorohexanoic acid (PFHxA) | - | ng/L | <1.9 | 1.5 J | 0.48 J | 0.97 J | <1.9 | <1.9 | 6.7 | <1.9 | <2.0 |
| Perfluoroheptanoic acid (PFHpA) | - | ng/L | <1.9 | 0.82 J | <1.9 | 0.47 J | <1.9 | <1.9 | 2.5 | <1.9 | <2.0 |
| Perfluorononanoic acid (PFNA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 |
| Perfluorobutanesulfonic acid (PFBS) | - | ng/L | 0.75 J | 0.49 J | <1.9 | <1.9 | <1.9 | <1.9 | 1.6 J | <1.9 | <2.0 |
| Perfluorodecanoic acid (PFDA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 |
| Perfluoroundecanoic acid (PFUnA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 |
| Perfluorododecanoic acid (PFDoA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 |
| Perfluorotridecanoic acid (PFTrDA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 |
| Perfluorotetradecanoic acid (PFTeA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 |
| 9-Chloroheptadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 |
| 11-Chlorooctadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 |
| 4,8-Dioxo-3H-perfluorononanoic acid (DONA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 |
| Perfluorooctanesulfonic acid (PFOS) | 70† | ng/L | <1.9 | 0.49 J | <1.9 | 0.70 J | 0.65 J | <1.9 | 61 | <1.9 | 1.5 J |
| Perfluorooctanoic acid (PFOA) | 70† | ng/L | <1.9 | 1.9 | <1.9 | 0.50 J | <1.9 | <1.9 | 1.4 J | <1.9 | <2.0 |
| LHA Combined (PFOS + PFOA) | 70† | ng/L | N/A | 2.4 J | N/A | 1.2 J | 0.65 J† | N/A | 62 J | N/A | 1.5 J† |

Notes: Sample results reported in TestAmerica Work Order J64367-1

ng/L nanograms per liter, equivalent to parts per trillion

EPA Environmental Protection Agency

LHA Lifetime Health Advisory

† EPA LHA level is 70 ppt for PFOS and PFOA combined.

< Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

DUP Field-duplicate sample

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.

J* Result considered estimated due to a QC failure. Flag applied by Shannon & Wilson, Inc.

‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

N/A Not applicable. The combined concentration could not be calculated because PFOS and PFOA were not detected in the project sample.

Table 1 - Summary of August/September 2020 Water-Supply Well Analytical PFAS Results

| Analyte | Sample Name | | PW-230 | PW-240 | PW-401 | PW-414 | PW-419 | PW-438 | PW-462 |
|--|-------------|-------|----------|----------|----------------|----------|----------|-----------|----------|
| | EPA LHA | Units | 9/1/2020 | 9/1/2020 | 9/1/2020 (DUP) | 9/1/2020 | 9/2/2020 | 8/31/2020 | 9/2/2020 |
| Perfluorohexanesulfonic acid (PFHxS) | - | ng/L | 0.71 J | 2.0 | 9.9 | 0.74 J | 1.9 | 1.9 | 13 J* |
| Perfluorohexanoic acid (PFHxA) | - | ng/L | <1.8 | <1.9 | 4.1 | <1.9 | 0.54 J | 0.52 J | 4.9 J* |
| Perfluoroheptanoic acid (PFHpA) | - | ng/L | <1.8 | <1.9 | 1.2 J | <1.9 | <1.9 | <1.9 | 2.0 J* |
| Perfluorononanoic acid (PFNA) | - | ng/L | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.8 J* |
| Perfluorobutanesulfonic acid (PFBS) | - | ng/L | <1.8 | <1.9 | 0.90 J | <1.9 | <1.9 | <1.9 | 0.74 J* |
| Perfluorodecanoic acid (PFDA) | - | ng/L | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.8 J* |
| Perfluoroundecanoic acid (PFUnA) | - | ng/L | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.8 J* |
| Perfluorododecanoic acid (PFDoA) | - | ng/L | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.8 J* |
| Perfluorotridecanoic acid (PFTrDA) | - | ng/L | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.8 J* |
| Perfluorotetradecanoic acid (PFTeA) | - | ng/L | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.8 J* |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | - | ng/L | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.8 J* |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | - | ng/L | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.8 J* |
| 9-Chloroheptadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | - | ng/L | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.8 J* |
| 11-Chlorooctadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | - | ng/L | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.8 J* |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | - | ng/L | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.8 J* |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | - | ng/L | <1.8 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.8 J* |
| Perfluorooctanesulfonic acid (PFOS) | 70† | ng/L | 0.68 J | 1.8 J | 38 | 1.2 J | 3.4 | 3.7 | 68 J* |
| Perfluorooctanoic acid (PFOA) | 70† | ng/L | 1.0 J | <1.9 | 0.68 J | <1.9 | <1.9 | <1.9 | 0.99 J* |
| LHA Combined (PFOS + PFOA) | 70† | ng/L | 1.7 J | 1.8 J‡ | 39 J | 1.2 J‡ | 3.4 ‡ | 3.7 ‡ | 69 J* |

Notes: Sample results reported in TestAmerica Work Order J64367-1
 ng/L nanograms per liter, equivalent to parts per trillion
 EPA Environmental Protection Agency
 LHA Lifetime Health Advisory
 † EPA LHA level is 70 ppt for PFOS and PFOA combined.
 < Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
 DUP Field-duplicate sample
 J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
 J* Result considered estimated due to a QC failure. Flag applied by Shannon & Wilson, Inc.
 ‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.
 N/A Not applicable. The combined concentration could not be calculated because PFOS and PFOA were not detected in the project sample.

Table 2 - Summary of December 2020/January 2021 Water-Supply Well Analytical PFAS Results

| Analyte | Sample Name | | PW-010 | PW-012 | PW-016 | PW-037 | PW-038 | | PW-039 | PW-040 | PW-059 | PW-203 |
|--|-------------|-------|---------|--------|--------|--------|------------|------------|--------|--------|--------|--------|
| | EPA LHA | Units | | | | | 12/30/2020 | 12/31/2020 | | | | |
| Perfluorohexanesulfonic acid (PFHxS) | - | ng/L | <1.8 | 8.5 | 1.3 J | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | 1.6 J | <1.9 |
| Perfluorohexanoic acid (PFHxA) | - | ng/L | <1.8 | 3.3 | 7.3 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | 0.55 J | <1.9 |
| Perfluoroheptanoic acid (PFHpA) | - | ng/L | <1.8 | 1.1 J | 3.4 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.9 |
| Perfluorononanoic acid (PFNA) | - | ng/L | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.9 |
| Perfluorobutanesulfonic acid (PFBS) | - | ng/L | <1.8 | 0.59 J | 1.2 J | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | 0.72 J | <1.9 |
| Perfluorodecanoic acid (PFDA) | - | ng/L | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.9 |
| Perfluoroundecanoic acid (PFUnA) | - | ng/L | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.9 |
| Perfluorododecanoic acid (PFDoA) | - | ng/L | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.9 |
| Perfluorotridecanoic acid (PFTrDA) | - | ng/L | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.9 |
| Perfluorotetradecanoic acid (PFTeA) | - | ng/L | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.9 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | - | ng/L | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.9 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | - | ng/L | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.9 |
| 9-Chloroheptadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | - | ng/L | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.9 |
| 11-Chlorooctadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | - | ng/L | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.9 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | - | ng/L | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.9 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | - | ng/L | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <1.9 |
| Perfluorooctanesulfonic acid (PFOS) | 70† | ng/L | 0.46 J | 12 | 0.69 J | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | 1.0 J | <1.9 |
| Perfluorooctanoic acid (PFOA) | 70† | ng/L | <1.8 | 0.47 J | 8.6 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | 0.70 J | <1.9 |
| LHA Combined (PFOS + PFOA) | 70† | ng/L | 0.46 J† | 12 J | 9.3 J | N/A | N/A | N/A | N/A | N/A | 1.7 J | N/A |

Notes: Sample results reported in TestAmerica Work Order J68521-1

- ng/L nanograms per liter, equivalent to parts per trillion
- EPA Environmental Protection Agency
- LHA Lifetime Health Advisory
- † EPA LHA level is 70 ppt for PFOS and PFOA combined.
- < Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
- DUP Field-duplicate sample
- J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- J* Result considered estimated due to a QC failure. Flag applied by Shannon & Wilson, Inc.
- ‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.
- N/A Not applicable. The combined concentration could not be calculated because PFOS and PFOA were not detected in the project sample.

Table 2 - Summary of December 2020/January 2021 Water-Supply Well Analytical PFAS Results

| Analyte | Sample Name | | PW-211 | | PW-218 | | PW-221 | | PW-235 | | PW-401 | | PW-466 | |
|---|-------------|-------|------------|------------|------------|------------------|------------|------------------|------------|------------|------------|------------------|------------|----------|
| | EPA LHA | Units | 12/30/2020 | 12/30/2020 | 12/30/2020 | 12/30/2020 (DUP) | 12/29/2020 | 12/29/2020 (DUP) | 12/29/2020 | 12/29/2020 | 12/29/2020 | 12/29/2020 (DUP) | 12/29/2020 | 1/1/2021 |
| Perfluorohexanesulfonic acid (PFHxS) | - | ng/L | <1.9 | <1.9 | <1.9 | 1.3 J | <1.9 | 1.2 J | <1.9 | 6.9 | <1.9 | 6.6 | <1.8 | |
| Perfluorohexanoic acid (PFHxA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <1.9 | 2.8 | <1.9 | 2.6 | <1.8 | |
| Perfluoroheptanoic acid (PFHpA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <1.9 | 1.1 J | <1.9 | 1.0 J | <1.8 | |
| Perfluorononanoic acid (PFNA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | |
| Perfluorobutanesulfonic acid (PFBS) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | |
| Perfluorodecanoic acid (PFDA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | |
| Perfluoroundecanoic acid (PFUnA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | |
| Perfluorododecanoic acid (PFDoA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | |
| Perfluorotridecanoic acid (PFTrDA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | |
| Perfluorotetradecanoic acid (PFTeA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | - | ng/L | 1.9 | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | |
| 9-Chloroheptadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | |
| 11-Chloroicosasulfuro-3-oxaundecane-1-sulfonic acid (11Cl-IPF3OUdS) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | - | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | |
| Perfluorooctanesulfonic acid (PFOS) | 70† | ng/L | 0.60 J | <1.9 | 1.7 J | 1.6 J | 1.6 J | 1.6 J | <1.9 | 30 | <1.9 | 28 | <1.8 | |
| Perfluorooctanoic acid (PFOA) | 70† | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <1.9 | 0.51 J | <1.9 | <2.0 | <1.8 | |
| LHA Combined (PFOS + PFOA) | 70† | ng/L | 0.60 J† | N/A | 1.7 J† | 1.6 J† | 1.6 J† | 1.6 J† | N/A | 31 J | N/A | 28 ‡ | N/A | |

Notes: Sample results reported in TestAmerica Work Order J68521-1
 ng/L nanograms per liter, equivalent to parts per trillion
 EPA Environmental Protection Agency
 LHA Lifetime Health Advisory
 † EPA LHA level is 70 ppt for PFOS and PFOA combined.
 < Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
 DUP Field-duplicate sample
 J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
 J* Result considered estimated due to a QC failure. Flag applied by Shannon & Wilson, Inc.
 ‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.
 N/A Not applicable. The combined concentration could not be calculated because PFOS and PFOA were not detected in the project sample.

Table 3 - Summary of March 2021 Water-Supply Well Analytical PFAS Results

| Analyte | Sample Name | | NPS Well | PW-010 | PW-012 | | PW-037 | PW-038 | PW-039 | PW-040 |
|--|-------------|-------|----------|---------|-----------------|-----------|--------|--------|--------|--------|
| | EPA LHA | Units | | | 3/24/2021 (DUP) | 3/25/2021 | | | | |
| Perfluorohexanesulfonic acid (PFHxS) | - | ng/L | 10 | <1.8 | 1.5 J | <1.7 | <1.6 | <1.8 | <1.7 | <1.8 |
| Perfluorohexanoic acid (PFHxA) | - | ng/L | 5.1 | <1.8 | 0.62 J | <1.7 | <1.6 | <1.8 | <1.7 | <1.8 |
| Perfluorheptanoic acid (PFHpA) | - | ng/L | 2.2 | <1.8 | <1.8 | <1.7 | <1.6 | <1.8 | <1.7 | <1.8 |
| Perfluorononanoic acid (PFNA) | - | ng/L | <1.9 | <1.8 | <1.8 | <1.7 | <1.6 | <1.8 | <1.7 | <1.8 |
| Perfluorobutanesulfonic acid (PFBS) | - | ng/L | 1.0 J | <1.8 | <1.8 | <1.7 | <1.6 | <1.8 | <1.7 | <1.8 |
| Perfluorodecanoic acid (PFDA) | - | ng/L | <1.9 | <1.8 | <1.8 | <1.7 | <1.6 | <1.8 | <1.7 | <1.8 |
| Perfluoroundecanoic acid (PFUnA) | - | ng/L | <1.9 | <1.8 | <1.8 | <1.7 | <1.6 | <1.8 | <1.7 | <1.8 |
| Perfluorododecanoic acid (PFDoA) | - | ng/L | <1.9 | <1.8 | <1.8 | <1.7 | <1.6 | <1.8 | <1.7 | <1.8 |
| Perfluorotridecanoic acid (PFTrDA) | - | ng/L | <1.9 | <1.8 | <1.8 | <1.7 | <1.6 | <1.8 | <1.7 | <1.8 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | - | ng/L | <4.6 | <4.4 | <4.4 | <4.4 | <4.1 | <4.5 | <4.3 | <4.5 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | - | ng/L | <4.6 | <4.4 | <4.4 | <4.4 | <4.1 | <4.5 | <4.3 | <4.5 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | - | ng/L | <1.9 | <1.8 | <1.8 | <1.7 | <1.6 | <1.8 | <1.7 | <1.8 |
| 11-Chlorooctadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | - | ng/L | <1.9 | <1.8 | <1.8 | <1.7 | <1.6 | <1.8 | <1.7 | <1.8 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | - | ng/L | <1.9 | <1.8 | <1.8 | <1.7 | <1.6 | <1.8 | <1.7 | <1.8 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | - | ng/L | <3.7 | <3.5 | <3.5 | <3.5 | <3.3 | <3.6 | <3.5 | <3.6 |
| Perfluorooctanesulfonic acid (PFOS) | 70† | ng/L | 7.1 | 0.79 J | 6.1 | 7.7 | <1.6 | <1.8 | <1.7 | <1.8 |
| Perfluorooctanoic acid (PFOA) | 70† | ng/L | 2.7 | <1.8 | <1.8 | <1.7 | <1.6 | <1.8 | <1.7 | <1.8 |
| LHA Combined (PFOS + PFOA) | 70† | ng/L | 9.8 | 0.79 J† | 7.7 † | N/A | N/A | N/A | N/A | N/A |

Notes: Sample results reported in TestAmerica Work Order J7796-1

- ng/L nanograms per liter, equivalent to parts per trillion
- EPA Environmental Protection Agency
- LHA Lifetime Health Advisory
- † EPA LHA level is 70 ppt for PFOS and PFOA combined.
- < Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
- Bold** Concentration exceeds EPA LHA level.
- DUP Field-duplicate sample
- J Flag applied by the laboratory.
- JH* Result considered estimated, biased high, due to a QC failure. Flag applied by Shannon & Wilson, Inc.
- † Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.
- N/A Not applicable. The combined concentration could not be calculated because PFOS and PFOA were not detected in the project sample.

Table 3 - Summary of March 2021 Water-Supply Well Analytical PFAS Results

| Analyte | Sample Name | | PW-089 | PW-203 | PW-208 | PW-211 | PW-221 | PW-401 | | PW-465 |
|--|-------------|-------|-----------|-----------|-----------|-----------|-----------|-----------|-----------------|-----------------|
| | EPA LHA | Units | 3/24/2021 | 3/23/2021 | 3/23/2021 | 3/24/2021 | 3/24/2021 | 3/23/2021 | 3/23/2021 (DUP) | 3/25/2021 (DUP) |
| Perfluorohexanesulfonic acid (PFHxS) | - | ng/L | 1.7 | 0.90 J | 0.52 J | <1.8 | 0.30 J | 7.7 | 6.5 | 18 J* |
| Perfluorohexanoic acid (PFHxA) | - | ng/L | 1.1 J | <1.7 | 2.3 | <1.8 | 0.52 J | 4.4 | 3.5 | 11 J* |
| Perfluorheptanoic acid (PFHpA) | - | ng/L | 0.26 J | <1.7 | <1.8 | <1.8 | <1.8 | 1.5 J | 1.4 J | 5.6 J* |
| Perfluorononanoic acid (PFNA) | - | ng/L | <1.7 | 0.50 J | <1.8 | <1.8 | <1.8 | <1.8 | <1.9 | 0.30 J* |
| Perfluorobutanesulfonic acid (PFBS) | - | ng/L | 1.3 J | <1.7 | 0.33 JH* | <1.8 | <1.8 | 0.74 J | 0.45 J | 1.4 J* |
| Perfluorodecanoic acid (PFDA) | - | ng/L | <1.7 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 | <1.9 | <1.8 |
| Perfluoroundecanoic acid (PFUnA) | - | ng/L | <1.7 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 | <1.9 | <1.8 |
| Perfluorododecanoic acid (PFDoA) | - | ng/L | <1.7 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 | <1.9 | <1.8 |
| Perfluorotridecanoic acid (PFTriDA) | - | ng/L | <1.7 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 | <1.9 | <1.8 |
| Perfluorotetradecanoic acid (PFTeA) | - | ng/L | <1.7 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 | <1.9 | <1.8 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | - | ng/L | <4.3 | <4.3 | <4.6 | <4.5 | <4.5 | <4.5 | <4.7 | 4.6 J* |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | - | ng/L | <4.3 | <4.3 | <4.6 | <4.5 | <4.5 | <4.5 | <4.7 | <4.6 |
| 9-Chloroheptadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | - | ng/L | <1.7 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 | <1.9 | <1.8 |
| 11-Chlorooctadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | - | ng/L | <1.7 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 | <1.9 | <1.8 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | - | ng/L | <1.7 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 | <1.9 | <1.8 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | - | ng/L | <3.4 | <3.4 | <3.7 | <3.6 | <3.6 | <3.6 | <3.7 | <3.7 |
| Perfluorooctanesulfonic acid (PFOS) | 70† | ng/L | 1.6 J | 1.8 | 1.6 J | <1.8 | 2.1 | 30 | 29 | 110 J* |
| Perfluorooctanoic acid (PFOA) | 70† | ng/L | 0.96 J | <1.7 | <1.8 | <1.8 | <1.8 | 1.0 J | <1.9 | 9.1 J* |
| LHA Combined (PFOS + PFOA) | 70† | ng/L | 2.6 J | 1.8 ‡ | 1.6 J† | N/A | 2.1 ‡ | 31 J | 29 ‡ | 119 J* |

Notes: Sample results reported in TestAmerica Work Order J7796-1

- ng/L nanograms per liter, equivalent to parts per trillion
- EPA Environmental Protection Agency
- LHA Lifetime Health Advisory
- † EPA LHA level is 70 ppt for PFOS and PFOA combined.
- < Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
- Bold** Concentration exceeds EPA LHA level.
- DUP Field-duplicate sample
- J Flag applied by the laboratory.
- JH* Result considered estimated, biased high, due to a QC failure. Flag applied by Shannon & Wilson, Inc.
- ‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.
- N/A Not applicable. The combined concentration could not be calculated because PFOS and PFOA were not detected in the project sample.

Table 4 - Summary of June 2021 Water-Supply Well Analytical PFAS Results

| Analyte | Sample Name | | PW-070 | PW-012 | PW-037 | PW-038 | PW-039 | PW-040 | PW-045 | PW-059 | PW-062 | PW-063 |
|--|-------------|-------|-----------|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | EPA LHA | Units | 6/22/2021 | 6/21/2021 (DUP) | 6/23/2021 | 6/23/2021 | 6/23/2021 | 6/23/2021 | 6/22/2021 | 6/21/2021 | 6/22/2021 | 6/21/2021 |
| Perfluorohexanesulfonic acid (PFHxS) | - | ng/L | <1.9 | 5.2 | <2.0 | <1.9 | <1.9 | <2.1 | 0.94 J | 2.1 | <2.0 | <2.0 |
| Perfluorohexanoic acid (PFHxA) | - | ng/L | <1.9 | <2.1 | <2.0 | <1.9 | 0.82 J | <2.1 | <1.9 | 1.3 J | 0.63 J | <2.0 |
| Perfluorheptanoic acid (PFHpA) | - | ng/L | <1.9 | <2.1 | <2.0 | <1.9 | <1.9 | <2.1 | <1.9 | 0.33 J | 0.39 J | <2.0 |
| Perfluorononanoic acid (PFNA) | - | ng/L | <1.9 | <2.1 | <2.0 | <1.9 | <1.9 | <2.1 | <1.9 | <2.0 | <2.0 | <2.0 |
| Perfluorobutanesulfonic acid (PFBS) | - | ng/L | <1.9 | 0.27 J | <2.0 | <1.9 | <1.9 | <2.1 | <1.9 | 0.81 J | 0.23 J | <2.0 |
| Perfluorodecanoic acid (PFDA) | - | ng/L | <1.9 | <2.1 | <2.0 | <1.9 | <1.9 | <2.1 | <1.9 | <2.0 | <2.0 | <2.0 |
| Perfluoroundecanoic acid (PFUnA) | - | ng/L | <1.9 | <2.1 | <2.0 | <1.9 | <1.9 | <2.1 | <1.9 | <2.0 | <2.0 | <2.0 |
| Perfluorododecanoic acid (PFDoA) | - | ng/L | <1.9 | <2.1 | <2.0 | <1.9 | <1.9 | <2.1 | <1.9 | <2.0 | <2.0 | <2.0 |
| Perfluorotridecanoic acid (PFTriDA) | - | ng/L | <1.9 | <2.1 | <2.0 | <1.9 | <1.9 | <2.1 | <1.9 | <2.0 | <2.0 | <2.0 |
| Perfluorotetradecanoic acid (PFTeA) | - | ng/L | <1.9 | <2.1 | <2.0 | <1.9 | <1.9 | <2.1 | <1.9 | <2.0 | <2.0 | <2.0 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | - | ng/L | <4.8 | <5.2 | <4.9 | <4.8 | <4.8 | <5.3 | <4.8 | <5.0 | <4.9 | <5.1 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (NEFOSAA) | - | ng/L | <4.8 | <5.2 | <4.9 | <4.8 | <4.8 | <5.3 | <4.8 | <5.0 | <4.9 | <5.1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | - | ng/L | <1.9 | <2.1 | <2.0 | <1.9 | <1.9 | <2.1 | <1.9 | <2.0 | <2.0 | <2.0 |
| 11-Chlorooctadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OU6S) | - | ng/L | <1.9 | <2.1 | <2.0 | <1.9 | <1.9 | <2.1 | <1.9 | <2.0 | <2.0 | <2.0 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | - | ng/L | <1.9 | <2.1 | <2.0 | <1.9 | <1.9 | <2.1 | <1.9 | <2.0 | <2.0 | <2.0 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | - | ng/L | <3.8 | <4.2 | <4.0 | <3.9 | <3.8 | <4.2 | <3.9 | <4.0 | <3.9 | <4.1 |
| Perfluorooctanesulfonic acid (PFOS) | 70† | ng/L | <1.9 | 5.5 | <2.0 | <1.9 | <1.9 | <2.1 | 0.99 J | 1.4 J | 1.2 J | <2.0 |
| Perfluorooctanoic acid (PFOA) | 70† | ng/L | <1.9 | <2.1 | <2.0 | <1.9 | <1.9 | <2.1 | <1.9 | <2.0 | <2.0 | <2.0 |
| LHA Combined (PFOS + PFOA) | 70† | ng/L | N/A | 5.5 ‡ | N/A | N/A | N/A | N/A | 0.99 J† | 1.4 J† | 1.2 J† | N/A |

Notes: Sample results reported in TestAmerica Work Order J75575-1

- ng/L nanograms per liter, equivalent to parts per trillion
- EPA Environmental Protection Agency
- LHA Lifetime Health Advisory
- † EPA LHA level is 70 ppt for PFOS and PFOA combined.
- < Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
- Bold** Concentration exceeds EPA LHA level.
- DUP Field-duplicate sample
- J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- JH* Result considered estimated, biased high, due to a QC failure. Flag applied by Shannon & Wilson, Inc.
- ‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.
- N/A Not applicable. The LHA combined concentration could not be calculated because PFOS and PFOA were not detected in the project sample.

Table 4 - Summary of June 2021 Water-Supply Well Analytical PFAS Results

| Analyte | Sample Name | | PW-204.1 | PW-205.1 | PW-208.1 | PW-211 | PW-221 | PW-401 | PW-419 |
|--|-------------|-------|-----------|-----------|-----------|-----------|-----------------|-----------------|-----------|
| | EPA LHA | Units | 6/21/2021 | 6/21/2021 | 6/21/2021 | 6/21/2021 | 6/22/2021 (DUP) | 6/23/2021 (DUP) | 6/22/2021 |
| Perfluorohexanesulfonic acid (PFHxS) | - | ng/L | 30 | 1.5 J | 11 | 0.76 J | 0.60 J | 1.8 J | 2.2 |
| Perfluorohexanoic acid (PFHxA) | - | ng/L | 11 | 0.78 J | 4.0 | <2.0 | <2.0 | 1.1 J | 1.2 J |
| Perfluoroheptanoic acid (PFHpA) | - | ng/L | 3.8 | <2.1 | 1.7 J | <2.0 | <2.0 | 0.32 J | 0.32 JH* |
| Perfluorononanoic acid (PFNA) | - | ng/L | <2.0 | <2.1 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 |
| Perfluorobutanesulfonic acid (PFBS) | - | ng/L | 2.4 | 0.27 J | 0.74 J | <2.0 | <2.0 | <2.0 | 0.28 J |
| Perfluorodecanoic acid (PFDA) | - | ng/L | <2.0 | <2.1 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 |
| Perfluoroundecanoic acid (PFUnA) | - | ng/L | <2.0 | <2.1 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 |
| Perfluorododecanoic acid (PFDoA) | - | ng/L | <2.0 | <2.1 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 |
| Perfluorotridecanoic acid (PFTriDA) | - | ng/L | <2.0 | <2.1 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 |
| Perfluorotetradecanoic acid (PFTeA) | - | ng/L | <2.0 | <2.1 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | - | ng/L | <5.0 | <5.2 | <5.0 | <5.0 | <5.0 | <4.8 | <4.9 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (NEFOSAA) | - | ng/L | <5.0 | <5.2 | <5.0 | <5.0 | <5.0 | <4.8 | <4.9 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | - | ng/L | <2.0 | <2.1 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 |
| 11-Chlorooctadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OU6S) | - | ng/L | <2.0 | <2.1 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | - | ng/L | <2.0 | <2.1 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | - | ng/L | <4.0 | <4.2 | <4.0 | <4.0 | <4.0 | <3.9 | <3.9 |
| Perfluorooctanesulfonic acid (PFOS) | 70† | ng/L | 49 | 2.2 | 67 | <2.0 | 0.97 J | 13 | 14 |
| Perfluorooctanoic acid (PFOA) | 70† | ng/L | 2.8 | <2.1 | 2.6 | <2.0 | <2.0 | <2.0 | <1.9 |
| LHA Combined (PFOS + PFOA) | 70† | ng/L | 52 | 2.2 ‡ | 70 | n/a | 0.97 ‡ | 13 ‡ | 14 ‡ |

Notes: Sample results reported in TestAmerica Work Order J75375-1

- ng/L nanograms per liter, equivalent to parts per trillion
- EPA Environmental Protection Agency
- LHA Lifetime Health Advisory
- † EPA LHA level is 70 ppt for PFOS and PFOA combined.
- < Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
- Bold** Concentration exceeds EPA LHA level.
- DUP Field-duplicate sample
- J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- JH* Result considered estimated, biased high, due to a QC failure. Flag applied by Shannon & Wilson, Inc.
- ‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.
- N/A Not applicable. The LHA combined concentration could not be calculated because PFOS and PFOA were not detected in the project sample.

Table 5 - Summary of August/September 2020 Monitoring Well Analytical PFAS Results

| Analyte | Sample Name | | MW-1-15 | MW-1-40 | MW-2-20 | MW-2-30 | MW-3-15 | MW-3-40 | MW-4-20 | MW-5-20 |
|--|-------------|-------|-----------|-----------------|----------|----------|----------|----------|----------|----------|
| | EPA LHA | Units | 8/31/2020 | 8/31/2020 (DUP) | 9/1/2020 | 9/1/2020 | 9/1/2020 | 9/1/2020 | 9/2/2020 | 9/2/2020 |
| Perfluorohexanesulfonic acid (PFHxS) | - | ng/L | <1.7 B* | <1.7 B* | 32 | <1.7 B* | 4.5 | 19 | <1.7 B* | <1.7 B* |
| Perfluorohexanoic acid (PFHxA) | - | ng/L | <1.7 | <1.7 | 84 | <1.7 | 1.0 J | 2.9 | <1.7 | 0.76 J |
| Perfluorheptanoic acid (PFHpA) | - | ng/L | <1.7 | <1.7 | 37 | <1.7 | 0.44 J | 0.63 J | 0.28 J | 0.22 J |
| Perfluorononanoic acid (PFNA) | - | ng/L | <1.7 | <1.7 | 4.0 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 |
| Perfluorobutanesulfonic acid (PFBS) | - | ng/L | 0.33 J | <1.7 | 3.0 | 1.3 J | 0.57 J | 1.9 | 0.32 J | 0.29 J |
| Perfluorodecanoic acid (PFDA) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 |
| Perfluoroundecanoic acid (PFUnA) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 |
| Perfluorododecanoic acid (PFDoA) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 |
| Perfluorotridecanoic acid (PFTiDA) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 |
| Perfluorotetradecanoic acid (PFTeA) | - | ng/L | <1.7 | 0.43 J | <1.7 | 0.39 J | <1.7 | <1.7 | 0.40 J | 0.41 J |
| N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (NEFOSAA) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 |
| 9-Chloroheptadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 |
| 11-Chlorooctadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OU6S) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 |
| 4,8-Dioxo-3H-perfluorononanoic acid (DONA) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | - | ng/L | <3.4 | <3.4 | <3.4 | <3.4 | <3.5 | <3.4 | <3.5 | <3.4 |
| Perfluorooctanesulfonic acid (PFOS) | - | ng/L | <3.4 | <3.4 | 260 | <1.7 | 6.7 | 12 | <1.7 | <2.0 B* |
| Perfluorodecanoic acid (PFOA) | 70† | ng/L | <1.7 | <1.7 | 36 | <1.7 | <1.7 | 2.2 | <1.7 | <1.7 |
| LHA Combined (PFOS + PFOA) | 70† | ng/L | N/A | N/A | 296 | N/A | 6.7 ‡ | 14 | N/A | N/A |

Notes: Sample results reported in TestAmerica Work Order J64388

ng/L nanograms per liter, equivalent to parts per trillion

EPA Environmental Protection Agency

LHA Lifetime Health Advisory

† EPA LHA level is 70 ppt for PFOS and PFOA combined.

< Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

Bold Concentration exceeds EPA LHA level.

DUP Field-duplicate sample

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.

B* Result is considered not detected due to quality control failures; see checklist for details. Flag applied by Shannon & Wilson, Inc.

‡ Minimum concentration; the combined concentration includes one or more result that is not detected greater than the MDL.

N/A Not applicable. The combined concentration could not be calculated because PFOS and PFOA were not detected in the project sample.

Table 5 - Summary of August/September 2020 Monitoring Well Analytical PFAS Results

SHANNON & WILSON, INC.

| Analyte | Sample Name | | MW-6-20 | | MW-7-20 | | MW-8-20 | | MW-9-30 | | MW-10-20 | | MW-11-15 | | MW-12-10 | |
|--|-------------|-------|----------------|----------|----------|----------|----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | EPA LHA | Units | 9/2/2020 (DUP) | 9/2/2020 | 9/2/2020 | 9/2/2020 | 9/17/2020(DUP) | 9/1/2020 | 9/1/2020 | 9/1/2020 | 9/1/2020 | 9/1/2020 | 9/2/2020 | 9/2/2020 | 9/2/2020 | 9/2/2020 |
| Perfluorohexanesulfonic acid (PFHxS) | - | ng/L | <1.8 B* | <1.8 B* | <1.7 B* | <1.7 B* | <1.7 B* | 23 | 13 | 15 | 52 | | | | | |
| Perfluorohexanoic acid (PFHxA) | - | ng/L | <1.7 | <1.7 | 1.2 J | <1.7 | <1.7 | 16 | 11 | 27 | 17 | | | | | |
| Perfluoroheptanoic acid (PFHpA) | - | ng/L | <1.7 | <1.7 | 0.84 J | <1.7 | <1.7 | 6.0 | 4.5 | 7.0 | 15 | | | | | |
| Perfluorononanoic acid (PFNA) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | 0.42 J | 1.4 J | 0.97 J | | | | | |
| Perfluorobutanesulfonic acid (PFBS) | - | ng/L | 0.28 J | 0.30 J | 0.45 J | <1.7 | <1.7 | 1.6 J | 0.64 J | 2.2 | 1.8 | | | | | |
| Perfluorodecanoic acid (PFDA) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | | | | | |
| Perfluoroundecanoic acid (PFUnA) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | | | | | |
| Perfluorododecanoic acid (PFDoA) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | | | | | |
| Perfluorotridecanoic acid (PFTiDA) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | | | | | |
| Perfluorotetradecanoic acid (PFTeA) | - | ng/L | <1.7 | 0.34 J | <1.7 | <1.7 | 0.50 J | <1.7 | <1.7 | <1.7 | <1.7 | | | | | |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | | | | | |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EFOSAA) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | | | | | |
| 9-Chloroheptadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | | | | | |
| 11-Chlorooctadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OU6S) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | | | | | |
| 4,8-Dioxo-3H-perfluorononanoic acid (DONA) | - | ng/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | | | | | |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | - | ng/L | <3.4 | <3.4 | <3.5 | <3.4 | <3.4 | <3.4 | <3.4 | <3.4 | <3.5 | | | | | |
| Perfluorooctanesulfonic acid (PFOS) | - | ng/L | <1.7 B* | <1.7 | <3.9 B* | <1.7 | <1.7 | 88 | 140 | 76 | 210 | | | | | |
| Perfluorodecanoic acid (PFOA) | 70† | ng/L | <1.7 | <1.7 | 2.7 | <1.7 | <1.7 | 2.3 | 2.6 | 2.4 | 9.8 | | | | | |
| LHA Combined (PFOS + PFOA) | 70† | ng/L | N/A | N/A | 2.7 B*† | N/A | N/A | 90 | 143 | 78 | 220 | | | | | |

Notes: Sample results reported in TestAmerica Work Order J64388

ng/L nanograms per liter, equivalent to parts per trillion

EPA Environmental Protection Agency

LHA Lifetime Health Advisory

† EPA LHA level is 70 ppt for PFOS and PFOA combined.

< Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

Bold Concentration exceeds EPA LHA level.

DUP Field-duplicate sample

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.

B* Result is considered not detected due to quality control failures; see checklist for details. Flag applied by Shannon & Wilson, Inc.

† Minimum concentration; the combined concentration includes one or more result that is not detected greater than the MDL.

N/A Not applicable. The combined concentration could not be calculated because PFOS and PFOA were not detected in the project sample.

Table 6 - Summary of December 2020/January 2021 Monitoring Well Analytical PFAS Results

| Analyte | Sample Name | | MMW-1-15 | MMW-1-40 | MMW-2-20 | MMW-2-30 | MMW-3-15 | MMW-3-40 | MMW-4-20 | MMW-5-20 | MMW-6-20 |
|--|-------------|-------|------------|------------|------------|------------|------------|------------|------------|----------|----------------|
| | EPA LHA | Units | 12/30/2020 | 12/30/2020 | 12/31/2020 | 12/31/2020 | 12/30/2020 | 12/30/2020 | 12/31/2020 | 1/1/2021 | 1/1/2021 (DUP) |
| Perfluorohexanesulfonic acid (PFHxS) | - | ng/L | <1.8 | 1.1 J | 64 | <1.8 | 3.6 | 14 | 0.65 J | 1.3 J | 2.8 |
| Perfluorohexanoic acid (PFHxA) | - | ng/L | <1.8 | <1.8 | 63 | <1.8 | 5.1 | 1.6 J | <1.8 | <1.8 | <1.8 |
| Perfluorooheptanoic acid (PFHpA) | - | ng/L | <1.8 | <1.8 | 54 | 0.70 J | 2.7 | 0.43 J | <1.8 | <1.8 | 0.29 J* |
| Perfluorononanoic acid (PFNA) | - | ng/L | <1.8 | <1.8 | 4.0 | 0.48 J | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 |
| Perfluorobutanesulfonic acid (PFBS) | - | ng/L | 0.20 J | <1.8 | 9.5 | 1.4 J | 1.2 J | 1.2 J | 0.46 J* | 0.44 J | 0.37 J |
| Perfluorodecanoic acid (PFDA) | - | ng/L | <1.8 | <1.8 | 0.34 J | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 |
| Perfluoroundecanoic acid (PFUnA) | - | ng/L | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 |
| Perfluorododecanoic acid (PFDoA) | - | ng/L | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 |
| Perfluorotridecanoic acid (PFTriDA) | - | ng/L | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 |
| Perfluorotetradecanoic acid (PFTeA) | - | ng/L | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 |
| N-Methyl perfluorooctane sulfonamideacetic acid (N-MeFOSAA) | - | ng/L | <4.5 | <4.6 | <4.4 | <4.5 | <4.5 | <4.5 | <4.5 | <4.5 | <4.5 |
| N-Ethyl perfluorooctane sulfonamideacetic acid (N-EtFOSAA) | - | ng/L | <4.5 | <4.6 | <4.4 | <4.5 | <4.5 | <4.5 | <4.5 | <4.5 | <4.5 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | - | ng/L | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 |
| 11-Chlorooctadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | - | ng/L | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | - | ng/L | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | - | ng/L | <3.6 | <3.7 | <3.5 | <3.6 | <3.6 | <3.6 | <3.6 | <3.6 | <3.5 |
| Perfluorooctanesulfonic acid (PFOS) | 70† | ng/L | <1.8 | 0.56 J* | 250 | <1.8 | 5.1 | 13 J* | <1.8 | 1.7 J | 1.2 J* |
| Perfluorooctanoic acid (PFOA) | | ng/L | <1.8 | <1.8 | 67 | 1.4 J | 0.94 J | 1.3 J | <1.8 | 1.0 J | <1.8 |
| LHA Combined (PFOS + PFOA) | 70† | ng/L | N/A | 0.56 J‡ | 317 | 1.4 J‡ | 6.0 J | 14 J | N/A | 2.7 J | 1.2 J‡ |

Notes: Sample results reported in TestAmerica Work Order J68519-1

ng/L nanograms per liter, equivalent to parts per trillion

EPA Environmental Protection Agency

LHA Lifetime Health Advisory

† EPA LHA level is 70 ppt for PFOS and PFOA combined.

< Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

Bold Concentration exceeds EPA LHA level.

DUP Field-duplicate sample

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.

J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

N/A Not applicable. The combined concentration could not be calculated; PFOS and PFOA were not detected in the project sample.

Table 6 - Summary of December 2020/January 2021 Monitoring Well Analytical PFAS Results

| Analyte | EPA LHA | Sample Name | MW-7-20 | | MW-8-20 | MW-9-30 | MW-10-20 | MW-11-15 | MW-12-10 |
|--|---------|-------------|------------|------------------|---------|---------|----------|----------|----------|
| | | | 12/30/2020 | 12/30/2020 (DUP) | | | | | |
| Perfluorohexanesulfonic acid (PFHxS) | - | ng/L | 1.0 J | 1.1 J | 0.62 J | 11 | 5.4 | 830 | 31 |
| Perfluorohexanoic acid (PFHxA) | - | ng/L | 1.2 J | 1.2 J | <1.7 | 4.6 | 5.3 | 180 | 13 |
| Perfluoroheptanoic acid (PFHpA) | - | ng/L | 0.91 J | 0.89 J | <1.7 | 2.0 | 1.8 | 19 | 15 |
| Perfluorononanoic acid (PFNA) | - | ng/L | <1.8 | <1.9 | <1.7 | <1.8 | <1.8 | 2.2 | 2.6 |
| Perfluorobutanesulfonic acid (PFBS) | - | ng/L | 0.43 J | <1.9 | <1.7 | 0.66 J | 0.42 J | 35 | 0.68 J |
| Perfluorodecanoic acid (PFDA) | - | ng/L | <1.8 | <1.9 | <1.7 | <1.8 | <1.8 | 1.3 J | 0.51 J |
| Perfluoroundecanoic acid (PFUnA) | - | ng/L | <1.8 | <1.9 | <1.7 | <1.8 | <1.8 | <1.7 | <1.8 |
| Perfluorododecanoic acid (PFDoA) | - | ng/L | <1.8 | <1.9 | <1.7 | <1.8 | <1.8 | <1.7 | <1.8 |
| Perfluorotridecanoic acid (PFTriDA) | - | ng/L | <1.8 | <1.9 | <1.7 | <1.8 | <1.8 | <1.7 | <1.8 |
| Perfluorotetradecanoic acid (PFTeA) | - | ng/L | <1.8 | <1.9 | <1.7 | <1.8 | <1.8 | <1.7 | <1.8 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | - | ng/L | <4.5 | <4.8 | <4.4 | <4.5 | <4.6 | <4.3 | <4.4 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | - | ng/L | <4.5 | <4.8 | <4.4 | <4.5 | <4.6 | <4.3 | <4.4 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | - | ng/L | <1.8 | <1.9 | <1.7 | <1.8 | <1.8 | <1.7 | <1.8 |
| 11-Chlorooctadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | - | ng/L | <1.8 | <1.9 | <1.7 | <1.8 | <1.8 | <1.7 | <1.8 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | - | ng/L | <1.8 | <1.9 | <1.7 | <1.8 | <1.8 | <1.7 | <1.8 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | - | ng/L | <3.6 | <3.8 | <3.5 | <3.6 | <3.7 | <3.5 | <3.7 |
| Perfluorooctanesulfonic acid (PFOS) | 70† | ng/L | 4.8 | 4.5 | <1.7 | 92 | 39 | 6,100 | 100 |
| Perfluorodecanoic acid (PFOA) | | ng/L | 1.1 J | 1.3 J | <1.7 | 1.0 J | <1.8 | 92 | 9.5 |
| LHA Combined (PFOS + PFOA) | 70† | ng/L | 5.9 J | 5.8 J | N/A | 93 J | 39 ‡ | 6,192 | 109 |

Notes: Sample results reported in TestAmerica Work Order J68519-1
 ng/L nanograms per liter, equivalent to parts per trillion
 EPA Environmental Protection Agency
 LHA Lifetime Health Advisory
 † EPA LHA level is 70 ppt for PFOS and PFOA combined.
 < Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.
Bold Concentration exceeds EPA LHA level.
 DUP Field-duplicate sample
 J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
 J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.
 ‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.
 N/A Not applicable. The combined concentration could not be calculated; PFOS and PFOA were not detected in the project sample.

Table 7 - Summary of March 2021 Monitoring Well Analytical PFAS Results

| Analyte | Sample Name | | MW-1-15 | MW-1-40 | MW-2-20 | MW-2-30 | MW-3-15 | MW-3-40 | MW-4-20 | MW-5-20 | MW-6-20 |
|--|-------------|-------|-----------|-----------|--------------------|-----------|---------------|------------|-----------|---------------|---------------|
| | EPA LHA | Units | 3/24/2021 | 3/24/2021 | 3/24/2021 (DUP) | 3/24/2021 | 3/24/2021 | 3/24/2021 | 3/25/2021 | 3/25/2021 | 3/25/2021 |
| Perfluorohexanesulfonic acid (PFHxS) | - | ng/L | <1.8 | 0.68 J | 98 | 0.54 J | 1.9 J* | 17 | 0.50 J | 1.4 J | 1.0 J |
| Perfluorohexanoic acid (PFHxA) | - | ng/L | <1.8 | <1.7 | 30 | <1.8 | 0.87 J* | 2.4 | <1.7 | 0.89 J | <1.8 J* |
| Perfluorooctanoic acid (PFHpA) | - | ng/L | <1.8 | <1.7 | 24 | <1.8 | <1.7 J* | <1.7 | <1.7 | <1.7 | <1.8 J* |
| Perfluorononanoic acid (PFNA) | - | ng/L | <1.8 | <1.7 | 4.0 | <1.8 | <1.7 J* | <1.7 | <1.7 | 0.65 J | <1.8 |
| Perfluorotridecane sulfonic acid (PFBS) | - | ng/L | <1.8 | <1.7 | 2.3 | 0.91 J | 0.24 J* | 0.93 J | <1.7 | 0.45 J | 0.30 J* |
| Perfluorodecanoic acid (PFDA) | - | ng/L | <1.8 | <1.7 | <1.7 | <1.8 | <1.7 J* | <1.7 | <1.7 | <1.7 | <1.8 J* |
| Perfluoroundecanoic acid (PFUnA) | - | ng/L | <1.8 | <1.7 | <1.7 | <1.8 | <1.7 J* | <1.7 | <1.7 | <1.7 | <1.8 J* |
| Perfluorododecanoic acid (PFDoA) | - | ng/L | <1.8 | <1.7 | <1.7 | <1.8 | <1.7 J* | <1.7 | <1.7 | <1.7 | <1.8 J* |
| Perfluorotridecanoic acid (PFTriDA) | - | ng/L | <1.8 | <1.7 | <1.7 | <1.8 | <1.7 J* | <1.7 | <1.7 | <1.7 | <1.8 J* |
| Perfluorotetradecanoic acid (PFTeA) | - | ng/L | <1.8 | <1.7 | <1.7 | <1.8 | <1.7 J* | <1.7 | <1.7 | <1.7 | <1.8 J* |
| N-Methyl perfluorooctane sulfonamideacetic acid (N-MeFOSAA) | - | ng/L | <4.4 | <4.3 | <4.2 | <4.4 | <4.3 J* | <4.4 | <4.3 | <4.3 | <4.5 J* |
| N-Ethyl perfluorooctane sulfonamideacetic acid (N-EFOSAA) | - | ng/L | <4.4 | <4.3 | <4.2 | <4.4 | <4.3 J* | <4.4 | <4.3 | <4.3 | <4.5 J* |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | - | ng/L | <1.8 | <1.7 | <1.7 | <1.8 | <1.7 J* | <1.7 | <1.7 | <1.7 | <1.8 |
| 11-Chlorooctadecafluoro-3-oxadecane-1-sulfonic acid (11Cl-PF3OUdS) | - | ng/L | <1.8 | <1.7 | <1.7 | <1.8 | <1.7 J* | <1.7 | <1.7 | <1.7 | <1.8 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | - | ng/L | <1.8 | <1.7 | <1.7 | <1.8 | <1.7 J* | <1.7 | <1.7 | <1.7 | <1.8 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | - | ng/L | <3.5 | <3.4 | <3.4 | <3.5 | <3.5 J* | <3.5 | <3.5 | <3.4 | <3.6 J* |
| Perfluorooctanesulfonic acid (PFOS) | 70† | ng/L | <1.8 | <1.7 | 250 | <1.8 | 3.1 J* | 13 | <1.7 | 2.7 | 1.5 J |
| Perfluorodecanoic acid (PFOA) | | ng/L | <1.8 | <1.7 | 72 | <1.8 | <1.7 J* | 1.7 | <1.7 | 0.87 J | <1.8 |
| LHA Combined (PFOS + PFOA) | 70† | ng/L | N/A | N/A | 328 | N/A | 3.1 J† | 15 | N/A | 3.6 J | 1.5 J† |

Notes: Sample results reported in TestAmerica Work Order J71788-1

ng/L nanograms per liter, equivalent to parts per trillion

EPA Environmental Protection Agency

LHA Lifetime Health Advisory

† EPA LHA level is 70 ppt for PFOS and PFOA combined.

< Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

Bold Concentration exceeds EPA LHA level.

DUP Field-duplicate sample

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.

J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

± Minimum concentration; the combined concentration includes one or more result that is not detected greater than the MDL.

N/A Not applicable. The combined concentration could not be calculated; PFOS and PFOA were not detected in the project sample.

Table 7 - Summary of March 2021 Monitoring Well Analytical PFAS Results

| Analyte | Sample Name | | MW-7-20 | MW-8-20 | MW-9-30 | MW-10-20 | MW-11-15 | MW-12-10 |
|--|-------------|-------|-----------|-----------|-----------|-----------|--------------------|-----------|
| | EPA LHA | Units | 3/25/2021 | 3/24/2021 | 3/24/2021 | 3/24/2021 | 3/25/2021 (DUP) | 3/25/2021 |
| Perfluorohexanesulfonic acid (PFHxS) | - | ng/L | 0.98 J | 0.57 J* | 15 | 17 J* | 17 | 9.4 |
| Perfluorohexanoic acid (PFHxA) | - | ng/L | 1.3 J | <1.8 J* | 8.9 | 16 J* | 15 | 4.8 |
| Perfluoroheptanoic acid (PFHpA) | - | ng/L | 1.0 J | <1.8 J* | 3.0 | 4.8 | 3.0 | 3.8 |
| Perfluorononanoic acid (PFNA) | - | ng/L | <1.7 | <1.8 J* | <1.8 | <1.7 | 0.62 J | 0.64 J |
| Perfluorobutanesulfonic acid (PFBS) | - | ng/L | <1.7 | <1.8 J* | 1.2 J | 1.3 J* | 1.4 J | 0.52 J |
| Perfluorodecanoic acid (PFDA) | - | ng/L | <1.7 | <1.8 J* | <1.8 | <1.7 J* | <1.7 | <1.8 |
| Perfluoroundecanoic acid (PFUnA) | - | ng/L | <1.7 | <1.8 J* | <1.8 | <1.7 J* | <1.7 | <1.8 |
| Perfluorododecanoic acid (PFDoA) | - | ng/L | <1.7 | <1.8 J* | <1.8 | <1.7 J* | <1.7 | <1.8 |
| Perfluorotridecanoic acid (PFTriDA) | - | ng/L | <1.7 | <1.8 J* | <1.8 | <1.7 J* | <1.7 | <1.8 |
| Perfluorotetradecanoic acid (PFTeA) | - | ng/L | <1.7 | <1.8 J* | <1.8 | <1.7 J* | <1.7 | <1.8 |
| N-Methyl perfluorooctane sulfonamideacetic acid (N-MeFOSAA) | - | ng/L | <4.4 | <4.6 J* | <4.5 | <4.3 J* | <4.2 | <4.5 |
| N-Ethyl perfluorooctane sulfonamideacetic acid (N-EFOSAA) | - | ng/L | <4.4 | <4.6 J* | <4.5 | <4.3 J* | <4.2 | <4.5 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | - | ng/L | <1.7 | <1.8 J* | <1.8 | <1.7 | <1.7 | <1.8 |
| 11-Chlorooctadecafluoro-3-oxadecane-1-sulfonic acid (11Cl-PF3OUdS) | - | ng/L | <1.7 | <1.8 J* | <1.8 | <1.7 | <1.7 | <1.8 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | - | ng/L | <1.7 | <1.8 J* | <1.8 | <1.7 | <1.7 | <1.8 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | - | ng/L | <3.5 | <3.7 J* | <3.6 | <3.5 J* | <3.4 | <3.6 |
| Perfluorooctanesulfonic acid (PFOS) | 70† | ng/L | 5.0 | <1.8 J* | 97 | 37 J* | 210 | 36 |
| Perfluorooctanoic acid (PFOA) | | ng/L | 2.3 | <1.8 J* | 1.0 J | 1.9 | 2.2 | 2.9 |
| LHA Combined (PFOS + PFOA) | 70† | ng/L | 7.3 | N/A | 98 J | 39 | 212 | 39 |

Notes: Sample results reported in TestAmerica Work Order J71788-1

ng/L nanograms per liter, equivalent to parts per trillion

EPA Environmental Protection Agency

LHA Lifetime Health Advisory

† EPA LHA level is 70 ppt for PFOS and PFOA combined.

< Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

Bold Concentration exceeds EPA LHA level.

DUP Field-duplicate sample

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.

J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

± Minimum concentration; the combined concentration includes one or more result that is not detected greater than the MDL.

N/A Not applicable. The combined concentration could not be calculated; PFOS and PFOA were not detected in the project sample.

Table 8 - Summary of June 2021 Monitoring Well Analytical PFAS Results

| Analyte | Sample Name | | MW-7-20 | | MW-8-20 | | MW-9-30 | | MW-10-20 | | MW-11-15 | | MW-12-10 | |
|--|-------------|-------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | EPA LHA | Units | 6/22/2021 | 6/22/2021 | 6/22/2021 | 6/22/2021 | 6/22/2021 | 6/22/2021 | 6/22/2021 | 6/23/2021 | 6/23/2021 | 6/23/2021 | 6/23/2021 | 6/23/2021 |
| Perfluorohexanesulfonic acid (PFHxS) | - | ng/L | 1.0 J | 0.49 J | 15 | 15 | 15 | 15 | 21 | 13 | 13 | 13 | 14 | 14 |
| Perfluorohexanoic acid (PFHxA) | - | ng/L | 1.2 J | <1.7 | 7.0 | 6.7 | 6.7 | 6.7 | 15 | 18 | 18 | 15 | 15 | 5.6 |
| Perfluorheptanoic acid (PFHpA) | - | ng/L | 0.96 J | 0.23 J | 3.2 | 3.2 | 3.2 | 3.2 | 5.6 | 2.7 | 2.7 | 3.0 | 3.0 | 5.5 |
| Perfluorononanoic acid (PFNA) | - | ng/L | <1.8 | <1.7 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 | 0.88 J | 0.85 J | 0.85 J | 0.66 J | 0.66 J |
| Perfluorobutanesulfonic acid (PFBS) | - | ng/L | 0.46 J | <1.7 | 0.78 J | 0.79 J | 0.79 J | 0.79 J | 0.87 J | 1.0 J | 0.97 J | 0.97 J | 0.61 J | 0.61 J |
| Perfluorodecanoic acid (PFDA) | - | ng/L | <1.8 | <1.7 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 | 0.86 J | 0.85 J | 0.85 J | <1.8 | <1.8 |
| Perfluoroundecanoic acid (PFUnA) | - | ng/L | <1.8 | <1.7 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 |
| Perfluorododecanoic acid (PFDoA) | - | ng/L | <1.8 | <1.7 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 |
| Perfluorotridecanoic acid (PFTriDA) | - | ng/L | <1.8 | <1.7 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 |
| Perfluorotetradecanoic acid (PFTeA) | - | ng/L | <1.8 | <1.7 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | - | ng/L | <4.5 | <4.2 | <4.4 | <4.4 | <4.4 | <4.4 | <4.4 | <4.3 | <4.4 | <4.4 | <4.4 | <4.5 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | - | ng/L | <4.5 | <4.2 | <4.4 | <4.4 | <4.4 | <4.4 | <4.4 | <4.3 | <4.4 | <4.4 | <4.4 | <4.5 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | - | ng/L | <4.5 | <4.2 | <4.4 | <4.4 | <4.4 | <4.4 | <4.4 | <4.3 | <4.4 | <4.4 | <4.4 | <4.5 |
| 11-Chlorooctadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | - | ng/L | <1.8 | <1.7 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | - | ng/L | <1.8 | <1.7 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 | <1.7 | <1.8 | <1.8 | <1.8 | <1.8 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | - | ng/L | <3.6 | <3.4 | <3.5 | <3.5 | <3.5 | <3.5 | <3.5 | <3.5 | <3.5 | <3.5 | <3.6 | <3.6 |
| Perfluorooctanesulfonic acid (PFOS) | 70† | ng/L | 6.2 | <1.7 | 84 | 95 | 95 | 95 | 95 | 140 | 130 | 130 | 50 | 50 |
| Perfluorodecanoic acid (PFOA) | 70† | ng/L | 6.7 | <1.7 | 0.97 J | 1.1 J | 1.1 J | 1.1 J | 2.0 | 2.0 | 2.1 | 2.1 | 2.6 | 2.6 |
| LHA Combined (PFOS + PFOA) | 70† | ng/L | 13 | N/A | 85 J | 96 J | 96 J | 96 J | 97 | 142 | 132 | 132 | 53 | 53 |

Notes: Sample results reported in Test/America Work Order J75574-1

ng/L nanograms per liter, equivalent to parts per trillion

EPA Environmental Protection Agency

LHA Lifetime Health Advisory

† EPA LHA level is 70 ppt for PFOS and PFOA combined.

< Analyte not detected; listed as less than the reporting limit (RL) unless otherwise flagged due to quality-control (QC) failures.

Bold Concentration exceeds EPA LHA level.

DUP Field-duplicate sample

J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.

± Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

N/A Not applicable. The LHA Combined concentration could not be calculated; PFOS and PFOA were not detected in the project sample.

Table 9 - Summary of August 2020 through June 2021 Monitoring Well Analytical Petroleum Results

| Analytical Method | Analyte | Cleanup Level | Units | MW-11-15 | | | | | MW-12-10 | | | | | | | |
|-------------------|-----------------------------|---------------|-------|----------------|-----------|------------|-----------------|-----------|-----------------|-----------|------------|------------|------------------|------------|-----------|----------|
| | | | | 9/2/2020 (DUP) | 9/2/2020 | 12/31/2020 | 3/25/2021 (DUP) | 3/25/2021 | 6/23/2021 (DUP) | 6/23/2021 | 9/2/2020 | 12/31/2020 | 12/31/2020 (DUP) | 3/25/2021 | 6/23/2021 | |
| AK101 | Gasoline Range Organics | 2.2 | mg/L | <0.050 | <0.050 | <0.0500 J* | <0.0500 | <0.0500 | <0.0500 | <0.0500 | <0.0500 J* | <0.0500 | <0.0500 | <0.0500 J* | <0.100 B* | <0.0500 |
| AK102 | Diesel Range Organics | 1.5 | mg/L | <0.29 | <0.29 | <0.512 B* | <0.288 | <0.288 | <0.283 | <0.283 | <0.500 B* | <0.233 J | <0.233 J | <0.500 B* | <0.283 | <0.233 J |
| AK103 | Residual Range Organics | 1.1 | mg/L | <0.481 B* | <0.481 B* | <0.510 B* | <0.240 | <0.240 | <0.236 | <0.245 | <0.240 | <0.240 | <0.240 | <0.481 B* | <0.236 | <0.232 |
| | 1,1,1,2-Tetrachloroethane | 5.7 | µg/L | <0.250 | <0.250 | - | - | - | - | - | <0.250 | - | - | <0.250 | - | - |
| | 1,1,1-Trichloroethane | 8.000 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | 1,1,1,2,2-Tetrachloroethane | 0.76 | µg/L | <0.250 | <0.250 | - | - | - | - | - | <0.250 | - | - | <0.250 | - | - |
| | 1,1,2-Trichloroethane | 0.41 | µg/L | <0.200 | <0.200 | - | - | - | - | - | <0.200 | - | - | <0.200 | - | - |
| | 1,1-Dichloroethane | 28 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | 1,1-Dichloroethene | 280 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | 1,1-Dichloropropene | - | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | 1,2,3-Trichlorobenzene | 7 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | 1,2,3-Trichloropropane | 0.0075 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | 1,2,4-Trichlorobenzene | 4 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | 1,2,4-Trimethylbenzene | 56 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | 1,2-Dibromo-3-chloropropane | - | µg/L | <5.00 | <5.00 | - | - | - | - | - | <5.00 | - | - | <5.00 | - | - |
| | 1,2-Dibromoethane | 0.075 | µg/L | <0.0375 | <0.0375 | - | - | - | - | - | <0.0375 | - | - | <0.0375 | - | - |
| | 1,2-Dichlorobenzene | 300 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | 1,2-Dichloroethane | 1.7 | µg/L | <0.250 | <0.250 | - | - | - | - | - | <0.250 | - | - | <0.250 | - | - |
| | 1,2-Dichloropropane | 8.2 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | 1,3,5-Trimethylbenzene | 60 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | 1,3-Dichlorobenzene | 300 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | 1,3-Dichloropropane | - | µg/L | <0.250 | <0.250 | - | - | - | - | - | <0.250 | - | - | <0.250 | - | - |
| | 1,4-Dichlorobenzene | 4.8 | µg/L | <0.250 | <0.250 | - | - | - | - | - | <0.250 | - | - | <0.250 | - | - |
| | 2,2-Dichloropropane | - | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| SW8260C (VOC) | 2-Bulthane (MEK) | 5,600 | µg/L | <5.00 | <5.00 | - | - | - | - | - | <5.00 | - | - | <5.00 | - | - |
| | 2-Chlorotoluene | - | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | 2-Hexanone | 38 | µg/L | <5.00 | <5.00 | - | - | - | - | - | <5.00 | - | - | <5.00 | - | - |
| | 4-Chlorotoluene | - | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | 4-Methyl-2-pentanone (MIBK) | 6,300 | µg/L | <5.00 | <5.00 | - | - | - | - | - | <5.00 | - | - | <5.00 | - | - |
| | Benzene | 4.6 | µg/L | <0.200 | <0.200 | - | - | - | - | - | <0.200 | - | - | <0.200 | - | - |
| | Bromobenzene | 62 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | Bromochloromethane | - | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | Bromodichloromethane | 1.3 | µg/L | <0.250 | <0.250 | - | - | - | - | - | <0.250 | - | - | <0.250 | - | - |
| | Bromoforn | 33 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | Bromomethane | 7.5 | µg/L | <2.50 | <2.50 | - | - | - | - | - | <2.50 | - | - | <2.50 | - | - |
| | Carbon disulfide | 810 | µg/L | <5.00 | <5.00 | - | - | - | - | - | <5.00 | - | - | <5.00 | - | - |
| | Carbon tetrachloride | 4.6 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | Chlorobenzene | 78 | µg/L | <0.250 | <0.250 | - | - | - | - | - | <0.250 | - | - | <0.250 | - | - |
| | Chloroethane | 21,000 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | Chloroform | 2.2 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | Chloromethane | 190 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | cis-1,2-Dichloroethene | 36 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |
| | cis-1,3-Dichloropropene | 4.7 | µg/L | <0.250 | <0.250 | - | - | - | - | - | <0.250 | - | - | <0.250 | - | - |
| | Dibromochloromethane | 8.7 | µg/L | <0.250 | <0.250 | - | - | - | - | - | <0.250 | - | - | <0.250 | - | - |
| | Dibromomethane | 8.3 | µg/L | <0.500 | <0.500 | - | - | - | - | - | <0.500 | - | - | <0.500 | - | - |

Table 9 - Summary of August 2020 through June 2021 Monitoring Well Analytical Petroleum Results

| Analytical Method | Cleanup Level | Analyte | Units | MW-11-15 | | | | MW-12-10 | | | | | |
|--------------------|------------------------|---------------------------|--------|----------|----------------|------------|-----------|-----------------|----------|------------|-----------------|-----------|----------|
| | | | | 9/2/2020 | 9/2/2020 (DUP) | 12/31/2020 | 3/25/2021 | 6/23/2021 (DUP) | 9/2/2020 | 12/31/2020 | 3/25/2021 (DUP) | 6/23/2021 | |
| SW8260C (VOC) | 200 | Dichlorodifluoromethane | µg/L | <0.500 | <0.500 | -- | -- | <0.500 | <0.500 | -- | -- | -- | -- |
| | 15 | Ethylbenzene | µg/L | <0.500 | <0.500 | -- | -- | <0.500 | <0.500 | -- | -- | -- | -- |
| | 1.4 | Hexachlorobutadiene | µg/L | <0.500 | <0.500 | -- | -- | <0.500 | <0.500 | -- | -- | -- | -- |
| | 450 | Isopropylbenzene | µg/L | <0.500 | <0.500 | -- | -- | <0.500 | <0.500 | -- | -- | -- | -- |
| | 110 | Methylene chloride | µg/L | <5.00 | <5.00 | -- | -- | <5.00 | <5.00 | -- | -- | -- | -- |
| | 140 | Methyl-t-butyl ether | µg/L | <5.00 | <5.00 | -- | -- | <5.00 | <5.00 | -- | -- | -- | -- |
| | 1.7 | Naphthalene | µg/L | <0.500 | <0.500 | -- | -- | <0.500 | <0.500 | -- | -- | -- | -- |
| | 1,000 | n-Butylbenzene | µg/L | <0.500 | <0.500 | -- | -- | <0.500 | <0.500 | -- | -- | -- | -- |
| | 660 | n-Propylbenzene | µg/L | <0.500 | <0.500 | -- | -- | <0.500 | <0.500 | -- | -- | -- | -- |
| | 190 | o-Xylene | µg/L | <0.500 | <0.500 | -- | -- | <0.500 | <0.500 | -- | -- | -- | -- |
| | (total) | P & M-Xylene | µg/L | <1.00 | <1.00 | -- | -- | <1.00 | <1.00 | -- | -- | -- | -- |
| | 2,000 | sec-Butylbenzene | µg/L | <0.500 | <0.500 | -- | -- | <0.500 | <0.500 | -- | -- | -- | -- |
| | 1,200 | Styrene | µg/L | <0.500 | <0.500 | -- | -- | <0.500 | <0.500 | -- | -- | -- | -- |
| | 680 | tert-Butylbenzene | µg/L | <0.500 | <0.500 | -- | -- | <0.500 | <0.500 | -- | -- | -- | -- |
| | 41 | Tetrachloroethene | µg/L | <0.500 | <0.500 | -- | -- | <0.500 | <0.500 | -- | -- | -- | -- |
| | 1,100 | Toluene | µg/L | <0.500 | <0.500 | -- | -- | <0.500 | <0.500 | -- | -- | -- | -- |
| | 190 | Total Xylenes | µg/L | <1.5 | <1.5 | -- | -- | <1.5 | <1.5 | -- | -- | -- | -- |
| | 360 | trans-1,2-Dichloroethene | µg/L | <0.500 | <0.500 | -- | -- | <0.500 | <0.500 | -- | -- | -- | -- |
| | 4.7 | trans-1,3-Dichloropropene | µg/L | <0.500 | <0.500 | -- | -- | <0.500 | <0.500 | -- | -- | -- | -- |
| | 2.8 | Trichloroethene | µg/L | <0.500 | <0.500 | -- | -- | <0.500 | <0.500 | -- | -- | -- | -- |
| 5,200 | Trichlorofluoromethane | µg/L | <0.500 | <0.500 | -- | -- | <0.500 | <0.500 | -- | -- | -- | -- | |
| 410 | Vinyl acetate | µg/L | <5.00 | <5.00 | -- | -- | <5.00 | <5.00 | -- | -- | -- | -- | |
| 0.19 | Vinyl chloride | µg/L | <0.750 | <0.750 | -- | -- | <0.750 | <0.750 | -- | -- | -- | -- | |
| 8270D SIM LV (PAH) | 11 | 1-Methylnaphthalene | µg/L | <0.232 | <0.232 | <0.240 J* | <0.240 | <0.232 | <0.232 | <0.232 | <0.250 J* | <0.250 J* | <0.250 |
| | 36 | 2-Methylnaphthalene | µg/L | <0.232 | <0.232 | <0.240 J* | <0.240 | <0.232 | <0.232 | <0.232 | <0.250 J* | <0.250 J* | <0.250 |
| | 530 | Acenaphthene | µg/L | <0.232 | <0.232 | <0.240 J* | <0.240 | <0.232 | <0.232 | <0.232 | <0.250 J* | <0.250 J* | <0.250 |
| | 260 | Acenaphthylene | µg/L | <0.232 | <0.232 | <0.240 J* | <0.240 | <0.232 | <0.232 | <0.232 | <0.250 J* | <0.250 J* | <0.250 |
| | 43 | Anthracene | µg/L | <0.232 | <0.232 | <0.240 J* | <0.240 | <0.232 | <0.232 | <0.232 | <0.250 J* | <0.250 J* | <0.250 |
| | 0.3 | Benzo(a)anthracene | µg/L | <0.232 | <0.232 | <0.240 J* | <0.240 | <0.232 | <0.232 | <0.232 | <0.250 J* | <0.250 J* | <0.250 |
| | 0.25 | Benzo(a)pyrene | µg/L | <0.093 | <0.093 | <0.0960 J* | <0.0960 | <0.0925 | <0.0925 | <0.0925 | <0.100 J* | <0.100 J* | <0.100 |
| | 2.5 | Benzo(b)fluoranthene | µg/L | <0.232 | <0.232 | <0.240 J* | <0.240 | <0.232 | <0.232 | <0.232 | <0.250 J* | <0.250 J* | <0.250 |
| | 0.26 | Benzo(k)fluoranthene | µg/L | <0.232 | <0.232 | <0.240 J* | <0.240 | <0.232 | <0.232 | <0.232 | <0.250 J* | <0.250 J* | <0.250 |
| | 0.8 | Benzo(k)fluoranthene | µg/L | <0.232 | <0.232 | <0.240 J* | <0.240 | <0.232 | <0.232 | <0.232 | <0.250 J* | <0.250 J* | <0.250 |
| | 2 | Chrysene | µg/L | <0.232 | <0.232 | <0.240 J* | <0.240 | <0.232 | <0.232 | <0.232 | <0.250 J* | <0.250 J* | <0.250 |
| | 0.25 | Dibenzo(a,h)anthracene | µg/L | <0.093 | <0.093 | <0.0960 J* | <0.0960 | <0.0925 | <0.0925 | <0.0925 | <0.100 J* | <0.100 J* | <0.100 |
| | 260 | Fluoranthene | µg/L | <0.232 | <0.232 | <0.240 J* | <0.240 | <0.232 | <0.232 | <0.232 | <0.250 J* | <0.250 J* | <0.250 |
| | 290 | Fluorene | µg/L | <0.232 | <0.232 | <0.240 J* | <0.240 | <0.232 | <0.232 | <0.232 | <0.250 J* | <0.250 J* | <0.250 |
| | 0.19 | Indeno(1,2,3-cd)pyrene | µg/L | <0.232 | <0.232 | <0.240 J* | <0.240 | <0.232 | <0.232 | <0.232 | <0.250 J* | <0.250 J* | <0.250 |
| | 1.7 | Naphthalene | µg/L | <0.463 | <0.463 | <0.481 J* | <0.481 | <0.463 | <0.463 | <0.463 | <0.500 J* | <0.500 J* | <0.500 |
| | 170 | Phenanthrene | µg/L | <0.232 | <0.232 | <0.240 J* | <0.240 | 0.0151 J | 0.0227 J | 0.0250 J | <0.250 J* | <0.250 J* | 0.0233 J |
| | 120 | Pyrene | µg/L | <0.232 | <0.232 | <0.240 J* | <0.240 | <0.232 | <0.232 | <0.232 | <0.250 J* | <0.250 J* | <0.250 |

Table 9 - Summary of August 2020 through June 2021 Monitoring Well Analytical Petroleum Results

| Analytical Method | Analyte | Cleanup Level | Units | MW-11-15 | | | | | MW-12-10 | | | | | |
|-------------------|---------------|---------------|-------|----------|----------------|------------|-----------|-----------|-----------------|-----------|------------|------------------|-----------|-----------|
| | | | | 9/2/2020 | 9/2/2020 (DUP) | 12/31/2020 | 3/25/2021 | 6/23/2021 | 6/23/2021 (DUP) | 9/2/2020 | 12/31/2020 | 12/31/2020 (DUP) | 3/25/2021 | 6/23/2021 |
| 8021 BTEX | Benzene | 4.6 | µg/L | -- | -- | <0.250 J* | <0.250 | <0.250 | <0.250 | <0.250 J* | <0.250 | <0.250 J* | <0.250 | <0.250 |
| | Ethylbenzene | 15 | µg/L | -- | -- | <0.500 J* | <1.00 B* | <0.500 | <0.500 | <0.500 J* | <1.00 B* | <0.500 J* | <1.00 B* | <0.500 |
| | o-Xylene | 190 (total) | µg/L | -- | -- | <0.500 J* | <1.00 B* | <1.00 | <1.00 | <0.500 J* | <1.00 B* | <0.500 J* | <1.00 B* | <1.00 |
| | P & M-Xylene | | µg/L | -- | -- | <1.00 J* | <2.00 B* | <0.500 | <0.500 | <1.00 J* | <2.00 B* | <1.00 J* | <2.00 B* | <0.500 |
| | Toluene | 1,100 | µg/L | -- | -- | <0.500 J* | <1.00 B* | <0.500 | <0.500 | <0.500 J* | <1.00 B* | <0.500 J* | <1.00 B* | <0.500 |
| | Total Xylenes | 190 | µg/L | -- | -- | <1.50 J* | <3.00 B* | <1.50 | <1.50 | <1.50 J* | <3.00 B* | <1.50 J* | <3.00 B* | <1.50 |

NOTES:
 Analytical results reported from SGS North America laboratory reports 1204821, 1210031, 1211331, and 1213682.
 ADEC Groundwater Cleanup Levels from 18 AAC 75.341 Table C - Groundwater Human Health Cleanup Level.

- DEC Alaska Department of Environmental Conservation
- PAH polynuclear aromatic hydrocarbons
- VOC volatile organic compounds
- mg/L milligrams per liter
- µg/L micrograms per liter
- < Analyte was not detected; reported as less than the limit of detection (LOD).
- µg/L The laboratory's LOD is greater than the regulatory limit.
- <BOLD - Groundwater cleanup level not established for this analyte
- J Estimated concentration, detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.
- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.
- B* Result is considered not detected at the LOQ or reported concentration (higher value reported) due to contamination identified in a blank.

Table 10 - Summary of August 2020 through June 2021 POET System Analytical PFAS and Arsenic Results

| Analyte | Sample Date | | | | 12/30/2020 | | | | 3/23/2021 | | | | 6/21/2021 | | | |
|---|------------------|-------|------|---------------|------------------|---------------|------|---------------|------------------|------|---------------|------------------|-----------|---------------|------------------|--|
| | Applicable limit | Units | Sink | Pre-treatment | C-Port Composite | Pre-treatment | Sink | Pre-treatment | C-Port Composite | Sink | Pre-treatment | C-Port Composite | Sink | Pre-treatment | C-Port Composite | |
| Perfluorohexanesulfonic acid (PFHxS) | — | ng/L | <1.9 | 25 | <1.9 | <1.9 | <1.9 | 7.6 | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | 12 | |
| Perfluorohexanoic acid (PFHxA) | — | ng/L | <1.9 | 12 | <1.9 | <1.9 | <1.9 | 3.3 | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | 8.1 | |
| Perfluoroheptanoic acid (PFHpA) | — | ng/L | <1.9 | 5.2 | <1.9 | <1.9 | <1.9 | 1.7 J | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | 2.8 | |
| Perfluorononanoic acid (PFNA) | — | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | 0.78 J | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | <1.8 | |
| Perfluorobutanesulfonic acid (PFBS) | — | ng/L | <1.9 | 1.6 J | <1.9 | <1.9 | <1.9 | 0.84 J | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | 0.68 J | |
| Perfluorodecanoic acid (PFDA) | — | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | 0.88 J | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | <1.8 | |
| Perfluoroundecanoic acid (PFUaA) | — | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | 0.84 J | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | <1.8 | |
| Perfluorododecanoic acid (PFDoA) | — | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | 0.83 J | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | <1.8 | |
| Perfluorotridecanoic acid (PFTriDA) | — | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | 0.87 J | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | <1.8 | |
| Perfluorotetradecanoic acid (PFTeA) | — | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | 0.79 J | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | <1.8 | |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | — | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | 0.89 J | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | <1.8 | |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | — | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | 0.96 J | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | <1.8 | |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | — | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | 0.79 J | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | <1.8 | |
| 11-Chloroheptafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUaS) | — | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | 0.84 J | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | <1.8 | |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | — | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | <1.8 | |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | — | ng/L | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | <1.8 | |
| Perfluorooctanesulfonic acid (PFOS) | — | ng/L | <1.9 | 98 | <1.9 | <1.9 | <1.9 | <1.9 | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | <3.6 | |
| Perfluorooctanoic acid (PFOA) | 70† | ng/L | <1.9 | 2.0 | <1.9 | <1.9 | <1.9 | 50 | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | 45 | |
| EPA LHA Combined (PFOS + PFOA) | 70† | ng/L | N/A | 100 | N/A | N/A | 51 J | 1.1 J | <1.7 | <1.7 | <1.7 | <1.9 | <1.9 | <1.9 | 1.4 J | |
| Arsenic | 10 | µg/L | <2.5 | 11.8 | <2.5 | <2.5 | 19.5 | 19.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | 14.9 J* | |

Notes: PFAS results from Eurofin TestAmerica work orders J64370-1, J68522-1, J71800-1, and J75577-1.

Arsenic results from SGS work orders 1204822, 1210032, 1211330, and 1213677.

ng/L nanograms per liter, equivalent to parts per trillion

µg/L micrograms per liter, equivalent to parts per billion

EPA Environmental Protection Agency

LHA Lifetime Health Advisory

† EPA LHA level is 70 ppt for PFOS and PFOA combined.

< Analyte not detected; PFAS results listed as less than the reporting limit (RL) and arsenic results listed as less than the limit of detection (LOD) unless otherwise flagged due to quality-control (QC) failures.

Concentration exceeds regulatory limit

— Analysis not requested or regulatory limit not available

J Estimated concentration; detected greater than the method detection limit (MDL) and less than the RL. Flag applied by the laboratory.

J* Estimated concentration due to quality control failure. Flag applied by Shannon & Wilson, Inc.

‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

N/A Not applicable. The combined concentration could not be calculated; PFOS and PFOA were not detected in the project sample.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Units | Sample Name | | | | | | | | | |
|---|-------|----------------------|----------------------|----------|--------|---------|----------------|----------|--------------|--------|---------|
| | | City Hall 9/27/18 | Firehouse 9/27/18 | NPS Well | | | | | | | |
| | | | | 9/25/18 | 3/7/19 | 6/8/19 | 10/11/2019/DUP | 10/11/19 | 9/2/2020 DUF | 9/2/20 | 3/25/21 |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | <2.0 | 2.3 | 11 | 13 | 14 | 10 | 9.3 | 7.3 | 7.4 | 10 |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | -- | -- | -- | -- | 2.2 | 1.8 J | 4.2 | 4.3 | 5.1 |
| Perfluorheptanoic acid (PFHpA) | ng/L | <2.0 | <2.0 | 1.7 J | 1.9 J | 1.8 J | 1.4 J | 1.3 J | 1.5 J | 1.5 J | 2.2 |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <1.8 | <1.9 | <1.9 | <1.8 | <1.9 |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | <2.0 | <2.0 | 1.2 J | 1.4 J | 1.5 J | 1.0 J* | 0.73 J* | 0.85 J | 0.84 J | 1.0 J |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | -- | -- | -- | -- | <1.8 | <1.9 | <1.9 | <1.8 | <1.9 |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | -- | -- | -- | -- | <1.8 | <1.9 | <1.9 | <1.8 | <1.9 |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | -- | -- | -- | -- | <1.8 | <1.9 | <1.9 | <1.8 | <1.9 |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | -- | -- | -- | -- | <1.8 | <1.9 | <1.9 | <1.8 | <1.9 |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | -- | -- | -- | -- | <1.8 | <1.9 | <1.9 | <1.8 | <1.9 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | ng/L | -- | -- | -- | -- | -- | <1.8 | <1.9 | <1.9 | <1.8 | <4.6 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | ng/L | -- | -- | -- | -- | -- | <1.8 | <1.9 | <1.9 | <1.8 | <4.6 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | -- | -- | -- | -- | -- | <1.8 | <1.9 | <1.9 | <1.8 | <1.9 |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ng/L | -- | -- | -- | -- | -- | <1.8 | <1.9 | <1.9 | <1.8 | <1.9 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | -- | -- | -- | -- | -- | <1.8 | <1.9 | <1.9 | <1.8 | <3.7 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | -- | -- | -- | -- | 4.0 J* | <1.9 J* | <1.9 | <1.8 | <3.7 |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | <2.0 | <2.0 | 22 | 13 | 16 | 19 | 18 | 9.7 | 10 | 7.1 |
| Perfluorodecanoic acid (PFDA) | ng/L | <2.0 | <2.0 | 4.6 | 4.3 | <3.4 B* | 2.9 | 2.8 | 1.9 | 2.0 | 2.7 |
| LHA Combined (PFOS + PFOA) | ng/L | N/A | N/A | 28 | 17 | 16 B† | 22 | 21 | 12 | 12 | 9.8 |

Notes:

- DEC Alaska Department of Environmental Conservation
- DUP Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- No applicable regulatory limit exists for the associated analyte.
- < Analyte was not detected; reported as less than the Reporting Limit (RL).
- Bold** Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
- J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.
- B* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- † Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Sample Name | | PW-001 | | PW-002 | | PW-003 | | PW-004 | | PW-005 | | PW-007 | | PW-008 | | PW-009 | |
|---|-------------|--------|---------|---------|---------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | 8/28/18 | 3/7/19 | 6/7/19 | 8/28/18 | 3/9/19 | 6/6/19 | 8/28/18 | 8/28/18 | 8/28/18 | 8/28/18 | 8/28/18 | 8/28/18 | 8/28/18 | 8/28/18 | 8/28/18 | 8/28/18 | 8/28/18 | 8/28/18 |
| Perfluorohexanesulfonic acid (PFHxS) | 350 | 320 | 489 | 32 | 21 | 20 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Perfluorohexanoic acid (PFHxA) | -- | -- | 216 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Perfluorooctanoic acid (PFHpA) | 13 | 17 | 26 | 4.4 | 3.4 | 1.8 J | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Perfluorononanoic acid (PFNA) | 3.0 | 2.3 | 4.2 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Perfluorobutanesulfonic acid (PFBS) | 20 | 21 | 25 | 2.2 | 1.8 J | 1.9 J | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Perfluorodecanoic acid (PFDA) | -- | -- | <2.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Perfluoroundecanoic acid (PFUnA) | -- | -- | <2.0 J* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Perfluorododecanoic acid (PFDoA) | -- | -- | <2.0 J* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Perfluorotridecanoic acid (PFTiDA) | -- | -- | <2.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Perfluorotetradecanoic acid (PFTeA) | -- | -- | <2.0 J* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | -- | -- | <8.0 J* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | -- | -- | <8.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Perfluorooctanesulfonic acid (PFOS) | 2,300 | 1,200 | 2,880 | 160 | 72 | 33 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 5.6 | <2.0 | <2.0 | <2.0 | |
| Perfluorooctanoic acid (PFOA) | 19 | 13 | 24 | 3.0 | <2.0 B* | 1.8 J | 1.4 J | 1.4 J | <2.0 | <2.0 | 0.90 J | 1.2 J | 1.2 J | 1.3 J | 1.3 J | <2.0 | <2.0 | |
| LHA Combined (PFOS + PFOA) | 2,319 | 1,213 | 2,904 | 163 | 72 B*† | 35 J | 1.4 J† | 1.4 J† | N/A | N/A | 0.90 J† | 6.8 J | 6.8 J | 1.3 J† | 1.3 J† | N/A | N/A | |

Notes:

- DEC Alaska Department of Environmental Conservation
- DUP Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- < No applicable regulatory limit exists for the associated analyte.
- Analyte was not detected; reported as less than the Reporting Limit (RL).
- Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
- Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.
- Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
- Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Units | Sample Name | | | | | | | | | | | | | | | | | | |
|---|-------|-------------|--------|------------|--------|----------|---------|----------|---------|---------|---------|---------|---------|----------|------|---------|------|---------|-------|---------|
| | | 8/29/18 | 6/9/19 | 10/12/2019 | DUF | 10/12/19 | 9/220 | 12/30/20 | 3/24/21 | 6/22/21 | 8/29/18 | 9/25/18 | 3/8/19 | 6/8/2019 | DUP | 6/8/19 | | | | |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | <2.0 | <2.0 | 2.5 | 0.97 J | 1.0 J | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | 3.0 | 3.4 | 3.2 | 2.4 | 2.4 | 1.9 J | 1.8 J |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | -- | 0.97 J | 1.0 J | <2.0 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | 3.4 | 3.1 | 4.5 | 4.5 | 3.5 | 3.4 | 3.4 |
| Perfluorooctanoic acid (PFOPA) | ng/L | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | 2.9 | 3.2 | 2.4 | 2.4 | 1.9 J | 1.8 J | 1.8 J |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | -- | -- | <1.9 | <2.0 | <2.0 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | -- | -- | -- | -- | -- | -- | -- |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | -- | <1.9 | <2.0 | <2.0 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | -- | -- | -- | -- | -- | -- | -- |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | -- | <1.9 | <2.0 | <2.0 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | -- | -- | -- | -- | -- | -- | -- |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | -- | <1.9 | <2.0 | <2.0 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | -- | -- | -- | -- | -- | -- | -- |
| Perfluorotridecanoic acid (PFTeA) | ng/L | -- | -- | <1.9 | <2.0 | <2.0 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | -- | -- | -- | -- | -- | -- | -- |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | -- | <1.9 | <2.0 | <2.0 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | -- | -- | -- | -- | -- | -- | -- |
| N-Methyl perfluorooctane sulfonamidecarboxylic acid (N-MeFOSAA) | ng/L | -- | -- | <1.9 | <2.0 | <2.0 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | -- | -- | -- | -- | -- | -- | -- |
| N-Ethyl perfluorooctane sulfonamidecarboxylic acid (N-EtFOSAA) | ng/L | -- | -- | <1.9 | <2.0 | <2.0 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | -- | -- | -- | -- | -- | -- | -- |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | -- | -- | <1.9 | <2.0 | <2.0 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | -- | -- | -- | -- | -- | -- | -- |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF30UDS) | ng/L | -- | -- | <1.9 | <2.0 | <2.0 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | -- | -- | -- | -- | -- | -- | -- |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | -- | -- | <1.9 | <2.0 | <2.0 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | -- | -- | -- | -- | -- | -- | -- |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | -- | <1.9 | <2.0 | <2.0 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | -- | -- | -- | -- | -- | -- | -- |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | <2.0 | <2.0 | 2.0 | 2.2 | 0.88 J | 0.46 J | 0.79 J | 0.79 J | 0.88 J | 0.46 J | 0.79 J | 0.79 J | 93 | 80 | 96 | 96 | 82 | 80 | 80 |
| Perfluorooctanoic acid (PFOA) | ng/L | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <1.9 | <1.8 | <1.8 | <1.9 | <1.8 | <1.8 | <1.9 | 3.3 | 3.1 | <2.6 B* | 2.0 | <2.2 B* | 2.0 | <2.2 B* |
| LHA Combined (PFOS + PFOA) | ng/L | N/A | N/A | 2.0 ‡ | 2.2 ‡ | 0.88 J† | 0.46 J† | 0.79 J† | 0.79 J† | 0.88 J† | 0.46 J† | 0.79 J† | 0.79 J† | 96 | 83 | 96 B† | 84 | 80 B† | 84 | 80 B† |

Notes:
 DEC Alaska Department of Environmental Conservation
 DUP Field-duplicate sample
 EPA United States Environmental Protection Agency
 PFAS per- and poly-fluoroalkyl substances
 ng/L nanograms per liter, equivalent to parts per trillion (ppt)
 < No applicable regulatory limit exists for the associated analyte.
 < Analyte was not detected; reported as less than the Reporting Limit (RL).
 † Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
 ‡ Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.
 * Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
 † Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
 ‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Units | Sample Name | | | | | | | | | | | | PW-013 | | | |
|---|-------|-------------|---------|--------|----------|----------|-------|--------|--------|-----------|-------|---------|-----------|--------|---------|---------|--------|
| | | 8/29/18 | 3/8/19 | 6/8/19 | 10/12/19 | 9/3/2020 | DUP | 9/3/20 | 1/2/21 | 3/24/2021 | DUP | 3/24/21 | 6/21/2021 | DUP | 6/21/21 | 8/29/18 | 3/7/19 |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | 8.9 | 11 | 7.0 | 9.3 | 4.7 | 4.2 | 1.1 J | 3.3 | 0.62 J | 1.3 J | 1.5 J | 5.2 | 4.8 | 860 | 650 | 692 |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | -- | -- | 2.8 | 1.2 J | 1.1 J | 3.3 | 0.62 J | 1.3 J | 1.5 J | 5.2 | 4.8 | 860 | 650 | 692 | |
| Perfluorooctanoic acid (PFHpA) | ng/L | 0.81 J | 0.87 J | <2.0 | 0.86 J | <1.9 | <1.9 | 1.1 J | <1.8 | <1.8 | <1.8 | <1.8 | <2.1 | <2.0 | 230 | 150 | 272 |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.9 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <2.1 | <2.0 | 8.9 | 18 | 14 |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | 1.8 J | 1.5 J | 1.1 J | 0.99 J | 0.50 J | <1.9 | 0.59 J | <1.8 | <1.8 | <1.8 | <1.8 | 0.27 J | 0.21 J | 57 | 34 | 32 |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.9 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <2.1 | <2.0 | -- | -- | 2.9 J |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.9 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <2.1 | <2.0 | -- | -- | <2.0 |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.9 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <2.1 | <2.0 | -- | -- | <2.0 |
| Perfluorotridecanoic acid (PFTeA) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.9 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <2.1 | <2.0 | -- | -- | <2.0 |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.9 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <2.1 | <2.0 | -- | -- | <2.0 |
| N-Methyl perfluorooctane sulfonamidecarboxylic acid (N-MeFOSAA) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.9 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <2.1 | <2.0 | -- | -- | <2.0 |
| N-Ethyl perfluorooctane sulfonamidecarboxylic acid (N-EFOSAA) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.9 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <2.1 | <2.0 | -- | -- | <2.0 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.9 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <2.1 | <2.0 | -- | -- | <2.0 |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUDS) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.9 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <2.1 | <2.0 | -- | -- | <2.0 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.9 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <2.1 | <2.0 | -- | -- | <2.0 |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | 7.7 | 25 | 14 | 13 | 15 | 14 | 12 | 6.1 | 7.7 | 5.5 | 5.6 | 5.6 | 5,490 | 5,500 | 6,000 | 5,490 |
| Perfluorodecanoic acid (PFDA) | ng/L | 0.77 J | <2.0 B* | 0.81 J | 0.74 J | <1.9 | <1.9 | 0.47 J | <1.8 | <1.8 | <1.8 | <2.1 | <2.0 | <2.0 | 130 | 110 | 129 |
| LHA Combined (PFOS + PFOA) | ng/L | 8.5 J | 25 B* | 15 J | 14 J | 15 † | 14 † | 12 J | 6.1 † | 7.7 † | 5.5 † | 5.6 † | 5.6 † | 5,630 | 6,110 | 5,619 | |

Notes:
 DEC Alaska Department of Environmental Conservation
 DUP Field-duplicate sample
 EPA United States Environmental Protection Agency
 PFAS per- and poly-fluoroalkyl substances
 ng/L nanograms per liter, equivalent to parts per trillion (ppt)
 -- No applicable regulatory limit exists for the associated analyte.
 < Analyte was not detected; reported as less than the Reporting Limit (RL).
 † Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
 J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.
 B* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
 J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
 † Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Units | PW-014 | PW-015 | PW-016 | PW-017 | PW-018 | PW-019 | PW-020 | PW-021 | PW-022 |
|---|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Sample Name | | 8/29/18 | 8/29/18 | 8/30/18 | 8/30/18 | 8/30/18 | 8/30/18 | 8/30/18 | 8/30/18 | 8/30/18 |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | <2.0 | <2.0 | 1.7 J | 1.3 J | 1.2 J | <2.0 | <2.0 | <2.0 | 377/19 |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | -- | -- | 7.3 | -- | -- | -- | -- | 230 |
| Perfluorheptanoic acid (PFHpA) | ng/L | <2.0 | <2.0 | <2.0 | 3.4 | <2.0 | <2.0 | <2.0 | 4.8 | 20 |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | 1.7 J |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | <2.0 | <2.0 | <2.0 | 1.2 J | <2.0 | <2.0 | <2.0 | 6.4 | 28 |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | -- | <1.9 | <1.9 | -- | -- | -- | -- | -- |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | -- | <1.9 | <1.9 | -- | -- | -- | -- | -- |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | -- | <1.9 | <1.9 | -- | -- | -- | -- | -- |
| Perfluorotridecanoic acid (PFTeA) | ng/L | -- | -- | <1.9 | <1.9 | -- | -- | -- | -- | -- |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | -- | <1.9 | <1.9 | -- | -- | -- | -- | -- |
| N-Methyl perfluorooctane sulfonamidecarboxylic acid (N-MeFOSAA) | ng/L | -- | -- | <1.9 | <1.9 | -- | -- | -- | -- | -- |
| N-Ethyl perfluorooctane sulfonamidecarboxylic acid (N-EtFOSAA) | ng/L | -- | -- | <1.9 | <1.9 | -- | -- | -- | -- | -- |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | -- | -- | <1.9 | <1.9 | -- | -- | -- | -- | -- |
| 11-Chloroicosadecafluoro-3-oxadecane-1-sulfonic acid (11Cl-PF3OUDS) | ng/L | -- | -- | <1.9 | <1.9 | -- | -- | -- | -- | -- |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | -- | -- | <1.9 | <1.9 | -- | -- | -- | -- | -- |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | -- | <1.9 | <1.9 | -- | -- | -- | -- | -- |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | <2.0 | <2.0 | 0.69 J | <2.0 | 2.5 | <2.0 | <2.0 | 520 | 1,500 |
| Perfluorooctanoic acid (PFOA) | ng/L | <2.0 | <2.0 | 1.3 J | 8.6 | <2.0 | <2.0 | <2.0 | 6.9 | 25 |
| LHA Combined (PFOS + PFOA) | ng/L | N/A | N/A | 1.3 J† | 9.3 J | 2.5 ‡ | N/A | N/A | N/A | 1,525 |
| | | | | | | | | | | 121 J |
| | | | | | | | | | | 122 J |

Notes:

- DEC Alaska Department of Environmental Conservation
- DUP Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- < No applicable regulatory limit exists for the associated analyte.
- Analyte was not detected; reported as less than the Reporting Limit (RL).
- Bold** Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
- J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.
- B* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- † Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Sample Name | PW-031 | PW-032 | PW-033 | PW-034 | PW-035 | PW-037 | | | | | | | |
|---|---------|---------|--------|---------|---------|---------|--------|--------|----------|--------|----------|---------|---------|
| Analyte | 8/27/18 | 8/28/18 | 9/1/20 | 8/28/18 | 8/28/18 | 8/31/18 | 3/8/19 | 6/7/19 | 10/11/19 | 9/1/20 | 12/31/20 | 3/25/21 | 6/23/21 |
| Units | | | | | | | | | | | | | |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.8 | <1.7 | <2.0 |
| Perfluorohexanoic acid (PFHxA) | -- | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <2.0 |
| Perfluorooctanoic acid (PFHpA) | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.8 | <1.7 | <2.0 |
| Perfluorononanoic acid (PFNA) | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.8 | <1.7 | <2.0 |
| Perfluorobutanesulfonic acid (PFBS) | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.8 | <1.7 | <2.0 |
| Perfluorodecanoic acid (PFDA) | -- | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <2.0 |
| Perfluoroundecanoic acid (PFUnA) | -- | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <2.0 |
| Perfluorododecanoic acid (PFDoA) | -- | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <2.0 |
| Perfluorotridecanoic acid (PFTiDA) | -- | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <2.0 |
| Perfluorotetradecanoic acid (PFTeA) | -- | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <2.0 |
| N-Methyl perfluorooctane sulfonamidecarboxylic acid (N-MeFOSAA) | -- | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <2.0 |
| N-Ethyl perfluorooctane sulfonamidecarboxylic acid (N-EtFOSAA) | -- | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <2.0 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | -- | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <2.0 |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | -- | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <2.0 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | -- | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <2.0 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | -- | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <2.0 |
| Perfluorooctanesulfonic acid (PFOS) | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 0.89 J | <1.9 | <1.8 | <3.5 | <3.9 |
| Perfluorodecanoic acid (PFDA) | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.8 | <1.7 | <2.0 |
| LHA Combined (PFOS + PFOA) | N/A | N/A | N/A | N/A | 1.5 J† | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Notes:
 DEC Alaska Department of Environmental Conservation
 DUP Field-duplicate sample
 EPA United States Environmental Protection Agency
 PFAS per- and poly-fluoroalkyl substances
 ng/L nanograms per liter, equivalent to parts per trillion (ppt)
 -- No applicable regulatory limit exists for the associated analyte.
 < Analyte was not detected; reported as less than the Reporting Limit (RL).
 † Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
 J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.
 B* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
 J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
 ‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Units | Sample Name | | | | | | | | | | | | | |
|---|-------|-------------|--------|--------|----------|--------|----------|-----------|------|---------|---------|-------------------|-------------------|-------------------|-------------------|
| | | 8/28/18 | 3/8/19 | 6/8/19 | 10/11/19 | 9/1/20 | 12/31/20 | 3/25/2021 | DUP | 3/25/21 | 6/23/21 | PW-041 8/28/18 | PW-042 8/29/18 | PW-043 8/29/18 | PW-044 8/29/18 |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.8 | <1.7 | <1.8 | <2.1 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <1.8 | <2.1 | -- | -- | -- | -- | -- |
| Perfluorheptanoic acid (PFHpA) | ng/L | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.8 | <1.7 | <1.8 | <2.1 | <2.0 | <2.0 | 0.94 J | <2.0 | <2.0 |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.8 | <1.7 | <1.8 | <2.1 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.8 | <1.7 | <1.8 | <2.1 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <1.8 | <2.1 | -- | -- | -- | -- | -- |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <1.8 | <2.1 | -- | -- | -- | -- | -- |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <1.8 | <2.1 | -- | -- | -- | -- | -- |
| Perfluorotridecanoic acid (PFTeA) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <1.8 | <2.1 | -- | -- | -- | -- | -- |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <1.8 | <2.1 | -- | -- | -- | -- | -- |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.8 | <4.3 | <4.5 | <5.3 | -- | -- | -- | -- | -- |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.8 | <4.3 | <4.5 | <5.3 | -- | -- | -- | -- | -- |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <1.8 | <2.1 | -- | -- | -- | -- | -- |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUDS) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <1.8 | <2.1 | -- | -- | -- | -- | -- |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | -- | -- | -- | <1.9 | <1.9 | <1.8 | <1.7 | <1.8 | <2.1 | -- | -- | -- | -- | -- |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | -- | -- | 0.66 J | <1.9 | <1.8 | <3.5 | <3.6 | <4.2 | -- | -- | -- | -- | -- |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.8 | <1.7 | <1.8 | <2.1 | <2.0 | <2.0 | 6.6 | <2.0 | 2.0 |
| Perfluorooctanoic acid (PFOA) | ng/L | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.8 | <1.7 | <1.8 | <2.1 | <2.0 | <2.0 | 7.6 | <2.0 | 1.3 J |
| LHA Combined (PFOS + PFOA) | ng/L | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 14 | N/A | 3.3 J |

Notes:

- DEC Alaska Department of Environmental Conservation
- DUP Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- No applicable regulatory limit exists for the associated analyte.
- < Analyte was not detected; reported as less than the Reporting Limit (RL).
- Bold** Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
- J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.
- B* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- ± Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Units | PW-045 | | PW-046 | | | PW-047 | | PW-048 | |
|---|-------|---------|----------|---------|---------------|---------|--------|--------|---------|---------|
| | | 8/29/18 | 10/11/19 | 6/22/21 | 8/30/2018 DUP | 8/30/18 | 3/8/19 | 6/9/19 | 8/31/18 | 8/31/18 |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | <2.0 | 0.48 J | 0.94 J | 1,900 | 1,700 | 320 | 865 | <2.0 | <2.0 |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | <1.9 | <1.9 | -- | -- | -- | 37 | -- | -- |
| Perfluorooctanoic acid (PFHpA) | ng/L | <2.0 | <1.9 | <1.9 | 29 | 27 | 6.2 | 8.3 | <2.0 | <2.0 |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <1.9 | <1.9 | <2.0 | <2.0 | <2.0 | 1.8 J | <2.0 | <2.0 |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | <2.0 | <1.9 | <1.9 | 120 | 110 | 20 | 29 | <2.0 | <2.0 |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | <1.9 | <1.9 | -- | -- | -- | <2.0 | -- | -- |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | <1.9 | <1.9 | -- | -- | -- | <2.0 | -- | <2.0 J* |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | <1.9 | <1.9 | -- | -- | -- | <2.0 | -- | <2.0 J* |
| Perfluorotridecanoic acid (PFTeA) | ng/L | -- | <1.9 | <1.9 | -- | -- | -- | <2.0 | -- | <2.0 |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | <1.9 | <1.9 | -- | -- | -- | <2.0 | -- | <2.0 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | ng/L | -- | <1.9 | <4.8 | -- | -- | -- | <8.0 | -- | <8.0 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | ng/L | -- | <1.9 | <4.8 | -- | -- | -- | <8.0 | -- | <8.0 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | -- | <1.9 | <1.9 | -- | -- | -- | -- | -- | -- |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ng/L | -- | <1.9 | <1.9 | -- | -- | -- | -- | -- | -- |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | -- | <1.9 | <1.9 | -- | -- | -- | -- | -- | -- |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | <1.9 | <3.9 | -- | -- | -- | -- | -- | -- |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | <2.0 | 0.79 J | 0.99 J | 83 | 79 | 63 | 68 | <2.0 | <2.0 J* |
| Perfluorodecanoic acid (PFDA) | ng/L | <2.0 | <1.9 | <1.9 | 82 | 77 | 20 B | 31 | <2.0 | <2.0 |
| LHA Combined (PFOS + PFOA) | ng/L | N/A | 0.79 J† | 0.99 J† | 165 | 156 | 83 B | 99 | N/A | N/A |

Notes:

- DEC Alaska Department of Environmental Conservation
- DUP Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- < No applicable regulatory limit exists for the associated analyte.
- Analyte was not detected; reported as less than the Reporting Limit (RL).
- Bold** Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
- J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.
- B* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- ± Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Units | Sample Name | | | | | | | | | | | |
|---|-------|-------------|--------|--------|----------|--------|----------|---------|---------|---------|--------|---------|---------|
| | | 8/29/18 | 3/7/19 | 6/9/19 | 10/12/19 | 9/1/20 | 12/30/20 | 3/24/21 | 6/21/21 | PW-061 | PW-062 | PW-066 | PW-070 |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | 1.2 J | 0.98 J | <2.0 | 1.1 J | 0.78 J | 1.6 J | 1.7 | 2.1 | 8/27/18 | 9/1/20 | 12/8/18 | 8/31/18 |
| Perfluorohexanoic acid (PFHxA) | ng/L | - | - | - | <1.9 | <1.9 | 0.55 J | 1.1 J | 1.3 J | 1.3 J | 0.85 J | <2.0 | 1.4 J |
| Perfluorheptanoic acid (PFHpA) | ng/L | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.9 | 0.26 J | 0.33 J | 1.3 J | 0.82 J | <2.0 | <2.0 |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.7 | <2.0 | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | <2.0 | <2.0 | <2.0 | <1.9 | 0.75 J | 0.72 J | 1.3 J | 0.81 J | <2.0 | 0.49 J | 0.23 J | 1.8 J |
| Perfluorodecanoic acid (PFDA) | ng/L | - | - | - | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | - | <1.9 | <2.0 | - |
| Perfluoroundecanoic acid (PFUnA) | ng/L | - | - | - | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | - | <1.9 | <2.0 | - |
| Perfluorododecanoic acid (PFDoA) | ng/L | - | - | - | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | - | <1.9 | <2.0 | - |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | - | - | - | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | - | <1.9 | <2.0 | - |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | - | - | - | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | - | <1.9 | <2.0 | - |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | ng/L | - | - | - | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | - | <1.9 | <2.0 | - |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | ng/L | - | - | - | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | - | <1.9 | <2.0 | - |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | - | - | - | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | - | <1.9 | <2.0 | - |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ng/L | - | - | - | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | - | <1.9 | <2.0 | - |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | - | - | - | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | - | <1.9 | <2.0 | - |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | - | - | - | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | - | <1.9 | <2.0 | - |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | 1.0 J | 1.6 J | 1.4 J | 1.4 J | 0.49 J | 1.2 J | <2.0 |
| Perfluorooctanoic acid (PFOA) | ng/L | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | 0.70 J | 0.96 J | <2.0 | 3.8 | 1.9 | <2.0 | 1.0 J |
| LHA Combined (PFOS + PFOA) | ng/L | N/A | N/A | N/A | N/A | N/A | 1.7 J | 2.6 J | 1.4 J† | 5.2 J | 2.4 J | 1.2 J† | 1.0 J† |

Notes:

- DEC Alaska Department of Environmental Conservation
- DUP Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- < No applicable regulatory limit exists for the associated analyte.
- Analyte was not detected; reported as less than the Reporting Limit (RL).
- Bold** Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
- J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.
- B* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- ± Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Units | Sample Name | | | | | | | | | |
|--|-------|-------------|---------------|---------|---------|---------|----------|---------|---------|--------|--------|
| | | PW-071 | PW-074 | PW-075 | PW-201 | | PW-202 | | | | |
| | | 68/19 | 9/25/2018 DUP | 8/31/18 | 9/25/18 | 9/25/18 | 12/30/20 | 9/25/18 | 12/8/18 | 3/7/19 | 6/7/19 |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | <2.0 | 1.1 J | <2.0 | 1.1 J | <2.0 | 1.3 J | 20 | 8.8 | 17 | 17 |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | -- | -- | -- | -- | 2.1 | -- | <8.0 B* | -- | -- |
| Perfluorooctanoic acid (PFHpA) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 1.3 J | 2.7 | 2.3 J | 2.0 | 3.2 |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <2.0 | <4.0 | <2.0 | <2.0 |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | 2.1 | 2.5 J | 2.4 | 2.9 |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | -- | -- | -- | -- | <1.9 | -- | <4.0 | -- | -- |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | -- | -- | -- | -- | <1.9 | -- | <4.0 | -- | -- |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | -- | -- | -- | -- | <1.9 | -- | <4.0 | -- | -- |
| Perfluorotridecanoic acid (PFTeA) | ng/L | -- | -- | -- | -- | -- | <1.9 | -- | <4.0 | -- | -- |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | -- | -- | -- | -- | <1.9 | -- | <4.0 | -- | -- |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | ng/L | -- | -- | -- | -- | -- | <1.9 | -- | <16 | -- | -- |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | ng/L | -- | -- | -- | -- | -- | <1.9 | -- | <16 | -- | -- |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | -- | -- | -- | -- | -- | <1.9 | -- | -- | -- | -- |
| 11-Chloroicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ng/L | -- | -- | -- | -- | -- | <1.9 | -- | -- | -- | -- |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | -- | -- | -- | -- | -- | <1.9 | -- | -- | -- | -- |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | -- | -- | -- | -- | <1.9 | -- | -- | -- | -- |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | 1.4 J | 2.1 | 68 | 20 | 32 | 38 |
| Perfluorooctanoic acid (PFOA) | ng/L | 0.82 J | <2.0 | 1.4 J | <2.0 | <2.0 | 0.97 J | 3.1 | <8.2 B* | 3.0 | 4.2 |
| LHA Combined (PFOS + PFOA) | ng/L | 0.82 J† | N/A | 1.4 J† | N/A | 1.4 J† | 3.1 J | 71 | 20 B*† | 35 | 42 |

Notes:

- DEC Alaska Department of Environmental Conservation
- DUP Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- < No applicable regulatory limit exists for the associated analyte.
- Analyte was not detected; reported as less than the Reporting Limit (RL).
- Bold** Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
- J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.
- B* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- ‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Units | Sample Name | | | | | | | | | | PW-204 | | PW-204.1 |
|---|-------|-------------|--------|--------|----------|----------|--------|--------|----------|---------|---------|---------|--------|----------|
| | | 9/25/18 | 3/8/19 | 6/8/19 | 10/14/19 | 9/1/2020 | DUP | 9/1/20 | 12/31/20 | 3/23/21 | 6/21/21 | 9/25/18 | 6/7/19 | 9/2/20 |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | 0.81 J | 0.95 J | <1.9 | 0.90 J | <2.0 | 3.3 | 2.4 | 3.2 | |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | -- | -- | <2.0 | 0.48 J | 0.67 J | <1.9 | <1.7 | <2.0 | -- | -- | 0.97 J | 11 |
| Perfluorheptanoic acid (PFHpA) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | 0.83 J | <2.0 | 0.47 J | 3.8 |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.9 | 0.50 J | <2.0 | <2.0 | <2.0 | <1.9 | <2.0 |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | <2.0 | <2.0 | <1.9 | 2.4 |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | -- | -- | <2.0 | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | -- | -- | <1.9 | <2.0 |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | -- | -- | <2.0 | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | -- | -- | <1.9 | <2.0 |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | -- | -- | <2.0 | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | -- | -- | <1.9 | <2.0 |
| Perfluorotridecanoic acid (PFTeA) | ng/L | -- | -- | -- | <2.0 | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | -- | -- | <1.9 | <2.0 |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | -- | -- | <2.0 | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | -- | -- | <1.9 | <2.0 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | ng/L | -- | -- | -- | <2.0 | <1.9 | <1.9 | <1.9 | <4.3 | <5.1 | -- | -- | <1.9 | <5.0 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | ng/L | -- | -- | -- | <2.0 | <1.9 | <1.9 | <1.9 | <4.3 | <5.1 | -- | -- | <1.9 | <5.0 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | -- | -- | -- | <2.0 | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | -- | -- | <1.9 | <2.0 |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ng/L | -- | -- | -- | <2.0 | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | -- | -- | <1.9 | <2.0 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | -- | -- | -- | <2.0 | <1.9 | <1.9 | <1.9 | <1.7 | <2.0 | -- | -- | <1.9 | <2.0 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | -- | -- | <2.0 | <1.9 | <1.9 | <1.9 | <3.4 | <4.1 | -- | -- | <1.9 | <4.0 |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | 0.70 J | <1.9 | 1.8 | <2.0 | 5.4 | 4.7 | 6.1 | 49 |
| Perfluorooctanoic acid (PFOA) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | 0.50 J | <1.9 | <1.7 | <2.0 | <2.0 | <2.0 | 0.75 J | 2.8 |
| LHA Combined (PFOS + PFOA) | ng/L | N/A | N/A | N/A | N/A | N/A | 1.2 J | N/A | 1.8 ‡ | N/A | 5.4 ‡ | 4.7 ‡ | 6.9 J | 52 |

Notes:

- DEC Alaska Department of Environmental Conservation
- DUP Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- < No applicable regulatory limit exists for the associated analyte.
- Analyte was not detected; reported as less than the Reporting Limit (RL).
- Bold** Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
- J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.
- B* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- ‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Units | PW-205 | | PW-205.1 | | PW-206 | | PW-207 | | PW-208 | | PW-208.1 | | PW-209 | |
|---|-------|--------|----------|----------|---------|---------|---------|---------|----------|----------|---------|----------|---------|--------|--------|
| | | 6/9/19 | 10/12/19 | 6/21/21 | 9/28/18 | 6/7/19 | 3/23/21 | 6/21/21 | 9/26/18 | 6/7/19 | 3/23/21 | 6/21/21 | 9/26/18 | 3/7/19 | 6/7/19 |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | 11 | 10 | 1.5 J | <2.0 | <2.0 | <2.0 | <2.0 | 2.5 | 0.52 J | 11 | 26 | 35 | 24 | |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | 3.0 | 0.78 J | -- | -- | -- | -- | -- | 2.3 | 4.0 | -- | -- | -- | |
| Perfluorooctanoic acid (PFHpA) | ng/L | <2.0 | 0.63 J | <2.1 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <1.8 | 1.7 J | 3.0 | 5.0 | 3.8 | |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <1.9 | <2.1 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <1.8 | <2.0 | <2.0 | <2.0 | <2.0 | |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | 2.0 | 1.4 J | 0.27 J | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 0.33 JH* | 0.74 J | 2.2 | 2.7 | 1.6 J | |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | <1.9 | <2.1 | -- | -- | -- | -- | -- | <1.8 | <2.0 | -- | -- | -- | |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | <1.9 | <2.1 | -- | -- | -- | -- | -- | <1.8 | <2.0 | -- | -- | -- | |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | <1.9 | <2.1 | -- | -- | -- | -- | -- | <1.8 | <2.0 | -- | -- | -- | |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | <1.9 | <2.1 | -- | -- | -- | -- | -- | <1.8 | <2.0 | -- | -- | -- | |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | <1.9 | <2.1 | -- | -- | -- | -- | -- | <1.8 | <2.0 | -- | -- | -- | |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | ng/L | -- | <1.9 | <2.1 | -- | -- | -- | -- | -- | <4.6 | <5.0 | -- | -- | -- | |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | ng/L | -- | <1.9 | <2.1 | -- | -- | -- | -- | -- | <4.6 | <5.0 | -- | -- | -- | |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | -- | <1.9 | <2.1 | -- | -- | -- | -- | -- | <1.8 | <2.0 | -- | -- | -- | |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ng/L | -- | <1.9 | <2.1 | -- | -- | -- | -- | -- | <1.8 | <2.0 | -- | -- | -- | |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | -- | <1.9 | <2.1 | -- | -- | -- | -- | -- | <1.8 | <2.0 | -- | -- | -- | |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | <1.9 | <4.2 | -- | -- | -- | -- | -- | <3.7 | <4.0 | -- | -- | -- | |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | 9.0 | 10 | 2.2 | <2.0 | <2.0 | <2.0 | <2.0 | 8.4 | 1.6 J | 67 | 100 | 120 | 120 | |
| Perfluorooctanoic acid (PFOA) | ng/L | 0.93 J | 0.76 J | <2.1 | <2.0 | <2.0 | <2.0 | 1.0 J | 0.80 J I | <1.8 | 2.6 | 3.3 | 2.7 | 2.5 | |
| LHA Combined (PFOS + PFOA) | ng/L | 9.9 J | 11 J | 2.2 † | N/A | 1.0 J † | N/A | 1.0 J † | 9.2 J I | 1.6 J † | 70 | 103 | 123 | 123 | |

Notes:

- DEC Alaska Department of Environmental Conservation
- DUP Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- < No applicable regulatory limit exists for the associated analyte.
- Analyte was not detected; reported as less than the Reporting Limit (RL).
- Bold** Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
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- B* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- † Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Units | PW-210 | | | | PW-211 | | | | PW-212 | | |
|--|-------|---------|---------|--------|--------|---------|----------|---------|---------|---------|---------|----------|
| | | 9/26/18 | 9/26/18 | 3/7/19 | 6/8/19 | 9/26/18 | 10/13/19 | 8/31/20 | 3/24/21 | 6/21/21 | 9/26/18 | 10/14/19 |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | 30 | 32 | 26 | 24 | 1.1 J | <1.9 | <1.9 | <1.8 | 0.76 J | <2.0 | <1.9 |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | -- | -- | -- | -- | 0.83 J | <1.9 | <1.8 | <2.0 | -- | <1.9 |
| Perfluorooctanoic acid (PFHpA) | ng/L | 3.1 | 3.0 | 2.6 | 3.2 | 3.3 | 0.51 J | <1.9 | <1.8 | <2.0 | <2.0 | <1.9 |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.8 | <2.0 | <2.0 | <1.9 |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | 2.5 | 2.7 | 2.7 | 1.9 J | <2.0 | 1.4 J | <1.9 | <1.8 | <2.0 | <2.0 | <1.9 |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <2.0 | -- | <1.9 |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <2.0 | -- | <1.9 |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <2.0 | -- | <1.9 |
| Perfluorotridecanoic acid (PFTeA) | ng/L | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <2.0 | -- | <1.9 |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <2.0 | -- | <1.9 |
| Perfluoropentadecanoic acid (PFPeA) | ng/L | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <2.0 | -- | <1.9 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | ng/L | -- | -- | -- | -- | -- | 3.7 | <1.9 | 1.9 | <4.5 | <5.0 | <1.9 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | ng/L | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <4.5 | <5.0 | <1.9 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <2.0 | -- | <1.9 |
| 11-Chlorooctadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ng/L | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <2.0 | -- | <1.9 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | -- | -- | -- | -- | -- | <1.9 | <1.9 | <1.8 | <2.0 | -- | <1.9 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | -- | -- | -- | -- | <1.9 | <1.9 | <3.6 | <4.0 | -- | <1.9 |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | 92 | 95 | 70 | 77 | 9.1 | 1.0 J | 0.65 J | 0.60 J | <2.0 | <2.0 | <1.9 |
| Perfluorodecanoic acid (PFDA) | ng/L | 2.6 | 2.8 | 2.5 | 2.4 | 15 | 1.0 J | <1.9 | <1.8 | <2.0 | <2.0 | <1.9 |
| LHA Combined (PFOS + PFOA) | ng/L | 95 | 98 | 73 | 79 | 24 | 2.0 J | 0.65 J† | 0.60 J† | N/A | N/A | N/A |

Notes:

- DEC Alaska Department of Environmental Conservation
- DUP Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- < No applicable regulatory limit exists for the associated analyte.
- Analyte was not detected; reported as less than the Reporting Limit (RL).
- Bold** Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
- J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.
- B* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- ± Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Units | PW-213 | | | | | PW-214 | | | PW-216 | | | PW-218 | | | PW-219 | | |
|---|-------|---------|--------|---------|--------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|---------|----------|---------|
| | | 11/1/18 | 3/7/19 | 6/9/19 | 9/2/20 | 9/27/18 | 9/27/18 | 9/27/18 | 11/1/18 | 12/30/20 | 9/27/18 | 9/27/18 | 10/14/19 | 8/31/20 | 9/27/18 | 9/27/18 | 10/14/19 | 8/31/20 |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | 24 | 24 | 20 | 17 | 0.88 J | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | -- | -- | 6.7 | -- | -- | -- | -- | -- | -- | 0.74 J | <1.9 | -- | -- | -- | <1.9 | <1.9 |
| Perfluorheptanoic acid (PFHpA) | ng/L | 2.2 | 2.5 | 2.1 | 2.5 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 0.49 J | <1.9 | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | 3.2 | 3.1 | 2.2 | 1.6 J | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 1.2 J | <1.9 | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.9 | <1.9 | -- | -- | -- | <1.9 | <1.9 |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.9 | <1.9 | -- | -- | -- | <1.9 | <1.9 |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.9 | <1.9 | -- | -- | -- | <1.9 | <1.9 |
| Perfluorotridecanoic acid (PFTeA) | ng/L | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.9 | <1.9 | -- | -- | -- | <1.9 | <1.9 |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.9 | <1.9 | -- | -- | -- | <1.9 | <1.9 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | ng/L | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.9 | <1.9 | -- | -- | -- | <1.9 | <1.9 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | ng/L | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.9 | <1.9 | -- | -- | -- | <1.9 | <1.9 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.9 | <1.9 | -- | -- | -- | <1.9 | <1.9 |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ng/L | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.9 | <1.9 | -- | -- | -- | <1.9 | <1.9 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.9 | <1.9 | -- | -- | -- | <1.9 | <1.9 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.9 | <1.9 | -- | -- | -- | <1.9 | <1.9 |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | 51 | 53 | 44 | 61 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 0.84 J | <1.9 | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 |
| Perfluorooctanoic acid (PFOA) | ng/L | 2.3 | 2.2 | <2.2 B* | 1.4 J | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | 0.84 J | <1.9 | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 |
| LHA Combined (PFOS + PFOA) | ng/L | 53 | 55 | 44 B † | 62 J | N/A | N/A | N/A | N/A | N/A | N/A | 0.84 J† | <1.9 | N/A | N/A | N/A | <1.9 | N/A |

Notes:

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- DUP Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- No applicable regulatory limit exists for the associated analyte.
- < Analyte was not detected; reported as less than the Reporting Limit (RL).
- Bold** Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
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- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- † Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Units | Sample Name | | | | | | | | | | | | |
|---|-------|-------------|--------|----------|--------|----------------|----------|---------|---------------|---------|--------|--------|--------|------|
| | | 11/1/18 | 6/9/19 | 10/12/19 | 9/2/20 | 12/30/2020 DUF | 12/30/20 | 3/24/21 | 6/22/2021 DUP | 6/22/21 | PW-230 | PW-231 | PW-232 | |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | <2.0 | <2.0 | 2.1 | 0.86 J | 1.3 J | 1.2 J | 0.90 J | 0.60 J | 0.59 J | 1.2 J | 0.71 J | 2.6 | <2.0 |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | -- | 0.87 J | <2.0 | <1.9 | <2.0 | 0.52 J | <2.0 | <1.9 | -- | <1.8 | -- | -- |
| Perfluorheptanoic acid (PFHpA) | ng/L | <2.0 | <2.0 | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | <2.0 | <1.9 | <2.0 | <1.8 | 0.96 J | <2.0 |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <2.0 | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | <2.0 | <1.9 | <2.0 | <1.8 | <2.0 | <2.0 |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | <2.0 | <2.0 | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | <2.0 | <1.9 | <2.0 | <1.8 | <2.0 | <2.0 |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | -- | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | <2.0 | <1.9 | -- | <1.8 | -- | -- |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | -- | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | <2.0 | <1.9 | -- | <1.8 | -- | -- |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | -- | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | <2.0 | <1.9 | -- | <1.8 | -- | -- |
| Perfluorotridecanoic acid (PFTeA) | ng/L | -- | -- | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | <2.0 | <1.9 | -- | <1.8 | -- | -- |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | -- | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | <2.0 | <1.9 | -- | <1.8 | -- | -- |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | ng/L | -- | -- | <1.9 | <2.0 | <1.9 | <2.0 | <4.5 | <5.0 | <4.8 | -- | <1.8 | -- | -- |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | ng/L | -- | -- | <1.9 | <2.0 | <1.9 | <2.0 | <4.5 | <5.0 | <4.8 | -- | <1.8 | -- | -- |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | -- | -- | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | <2.0 | <1.9 | -- | <1.8 | -- | -- |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUDS) | ng/L | -- | -- | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | <2.0 | <1.9 | -- | <1.8 | -- | -- |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | -- | -- | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | <2.0 | <1.9 | -- | <1.8 | -- | -- |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | -- | <1.9 | <2.0 | <1.9 | <2.0 | <3.6 | <4.0 | <3.9 | -- | <1.8 | -- | -- |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | <2.0 | <2.0 | 2.4 | 1.5 J | 1.7 J | 1.6 J | 2.1 | 0.97 J | 0.98 J | <2.0 | 0.68 J | <2.0 | <2.0 |
| Perfluorooctanoic acid (PFOA) | ng/L | <2.0 | <2.0 | <1.9 | <2.0 | <1.9 | <2.0 | <1.8 | <2.0 | <1.9 | 1.1 J | 1.0 J | 1.1 J | <2.0 |
| LHA Combined (PFOS + PFOA) | ng/L | N/A | N/A | 2.4 ‡ | 1.5 ‡ | 1.7 ‡ | 1.6 ‡ | 2.1 ‡ | 0.97 ‡ | 0.98 ‡ | 1.1 ‡ | 1.7 J | 1.1 ‡ | N/A |

Notes:
 DEC Alaska Department of Environmental Conservation
 DUP Field-duplicate sample
 EPA United States Environmental Protection Agency
 PFAS per- and poly-fluoroalkyl substances
 ng/L nanograms per liter, equivalent to parts per trillion (ppt)
 -- No applicable regulatory limit exists for the associated analyte.
 < Analyte was not detected; reported as less than the Reporting Limit (RL).
Bold Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
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 B* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
 J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
 ‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Sample Name | PW-233 | PW-234 | PW-235 | PW-236 | PW-237 | PW-238 | PW-239 | PW-240 | PW-241 |
|---|-------------|----------|----------|---------|--------------|---------|---------|---------|---------|-------------|
| | Units | 10/31/18 | 10/31/18 | 11/1/18 | 03/12/18 DUF | 11/1/18 | 11/1/18 | 11/1/18 | 11/1/18 | 11/1/18 DUF |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | <2.0 | <2.0 | <1.9 | 0.96 J | <2.0 | 3.5 | <2.0 | 3.3 | 5.8 |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | -- | <1.9 | -- | -- | -- | -- | <1.9 | -- |
| Perfluorheptanoic acid (PFHpA) | ng/L | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <2.0 |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <2.0 |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | -- | <1.9 | -- | -- | -- | -- | <1.9 | -- |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | -- | <1.9 | -- | -- | -- | -- | <1.9 | -- |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | -- | <1.9 | -- | -- | -- | -- | <1.9 | -- |
| Perfluorotridecanoic acid (PFTeA) | ng/L | -- | -- | <1.9 | -- | -- | -- | -- | <1.9 | -- |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | -- | <1.9 | -- | -- | -- | -- | <1.9 | -- |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | ng/L | -- | -- | <1.9 | -- | -- | -- | -- | <1.9 | -- |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | ng/L | -- | -- | <1.9 | -- | -- | -- | -- | <1.9 | -- |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | -- | -- | <1.9 | -- | -- | -- | -- | <1.9 | -- |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUDS) | ng/L | -- | -- | <1.9 | -- | -- | -- | -- | <1.9 | -- |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | -- | -- | <1.9 | -- | -- | -- | -- | <1.9 | -- |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | -- | <1.9 | -- | -- | -- | -- | <1.9 | -- |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | 2.0 | <2.0 | <2.0 | 1.8 J |
| Perfluorooctanoic acid (PFOA) | ng/L | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | 0.77 J | <2.0 | <2.0 | 0.98 J |
| LHA Combined (PFOS + PFOA) | ng/L | N/A | N/A | N/A | N/A | N/A | 2.8 J | N/A | 1.8 J† | 3.9 J |

Notes:

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- DUF Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- < No applicable regulatory limit exists for the associated analyte.
- Analyte was not detected; reported as less than the Reporting Limit (RL).
- Bold** Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
- J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.
- B* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- ± Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Sample Name | PW-247 | PW-248 | PW-249 | PW-255 | PW-275 | PW-400 |
|--|-------------|---------|---------|---------------|----------|---------------|---------|
| | Units | 11/2/18 | 11/2/18 | 11/2/2018 DUP | 10/31/18 | 12/9/2018 DUP | 12/9/18 |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | 2.7 | 6.3 | 1.5 J | <2.0 | <2.0 | <2.0 |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | -- | -- | -- | -- | -- |
| Perfluorheptanoic acid (PFHpA) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | -- | -- | -- | -- | -- |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | -- | -- | -- | -- | -- |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | -- | -- | -- | -- | -- |
| Perfluorotridecanoic acid (PFTeA) | ng/L | -- | -- | -- | -- | -- | -- |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | -- | -- | -- | -- | -- |
| N-Methyl perfluorooctane sulfonamidecarboxylic acid (N-MeFOSAA) | ng/L | -- | -- | -- | -- | -- | -- |
| N-Ethyl perfluorooctane sulfonamidecarboxylic acid (N-EFOSAA) | ng/L | -- | -- | -- | -- | -- | -- |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9C16PF3ONS) | ng/L | -- | -- | -- | -- | -- | -- |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11C1-PF3OUs) | ng/L | -- | -- | -- | -- | -- | -- |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | -- | -- | -- | -- | -- | -- |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | -- | -- | -- | -- | -- |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | <2.0 | 1.8 J | 1.4 J | <2.0 | <2.0 | <2.0 |
| Perfluorooctanoic acid (PFOA) | ng/L | 1.1 J | 0.97 J | <2.0 | <2.0 | <2.0 | <2.0 |
| LHA Combined (PFOS + PFOA) | ng/L | 1.1 J† | 2.8 J | 1.4 J† | N/A | N/A | N/A |

Notes:

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- DUP Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- < No applicable regulatory limit exists for the associated analyte.
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- † Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Units | Sample Name | | | | | | | | | | | | | | | | |
|---|-------|-------------|----------|---------|---------|----------|--------|--------|--------|----------|--------|----------|-----------|--------|---------|-----------|----------|----------|
| | | PW-401 | | | | | | | | | | | | | | | | |
| | | 9/25/18 | 10/31/18 | 3/8/19 | 6/9/19 | 10/11/19 | 9/1/20 | DUP | 9/1/20 | 12/29/20 | DUF | 12/29/20 | 3/23/2021 | DUP | 3/23/21 | 6/23/2021 | DUP | 6/23/21 |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | 18 | 20 | 20 | 15 | 16 | 9.9 | 9.6 | 6.9 | 6.6 | 6.9 | 6.6 | 6.5 | 7.7 | 6.5 | 7.7 | 1.8 J | 2.2 |
| Perfluorohexanoic acid (PFHxA) | ng/L | - | - | - | - | 5.4 | 4.1 | 4.4 | 2.8 | 2.6 | 2.8 | 2.6 | 3.5 | 4.4 | 3.5 | 4.4 | 1.1 J | 1.2 J |
| Perfluorooctanoic acid (PFHpA) | ng/L | 1.6 J | 1.7 J | 2.0 | 1.7 J | 1.8 J | 1.2 J | 1.3 J | 1.1 J | 1.0 J | 1.1 J | 1.0 J | 1.4 J | 1.5 J | 1.4 J | 1.5 J | 0.32 JH* | 0.32 JH* |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.8 | <1.9 | <1.8 | <2.0 | <1.9 |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | 2.4 | 2.3 | 1.8 J | 1.2 J | 1.3 J | 0.90 J | 0.89 J | <2.0 | <2.0 | <2.0 | <2.0 | 0.45 J | 0.74 J | 0.45 J | 0.74 J | <2.0 | 0.28 J |
| Perfluorodecanoic acid (PFDA) | ng/L | - | - | - | - | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.8 | <1.9 | <1.8 | <2.0 | <1.9 |
| Perfluoroundecanoic acid (PFUnA) | ng/L | - | - | - | - | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.8 | <1.9 | <1.8 | <2.0 | <1.9 |
| Perfluorododecanoic acid (PFDoA) | ng/L | - | - | - | - | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.8 | <1.9 | <1.8 | <2.0 | <1.9 |
| Perfluorotridecanoic acid (PFTeA) | ng/L | - | - | - | - | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.8 | <1.9 | <1.8 | <2.0 | <1.9 |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | - | - | - | - | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.8 | <1.9 | <1.8 | <2.0 | <1.9 |
| N-Methyl perfluorooctane sulfonamidecarboxylic acid (N-MeFOSAA) | ng/L | - | - | - | - | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.8 | <1.9 | <1.8 | <2.0 | <1.9 |
| N-Ethyl perfluorooctane sulfonamidecarboxylic acid (N-EtFOSAA) | ng/L | - | - | - | - | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.8 | <1.9 | <1.8 | <2.0 | <1.9 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | - | - | - | - | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.8 | <1.9 | <1.8 | <2.0 | <1.9 |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ng/L | - | - | - | - | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.8 | <1.9 | <1.8 | <2.0 | <1.9 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | - | - | - | - | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.8 | <1.9 | <1.8 | <2.0 | <1.9 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | - | - | - | - | <1.9 | <1.9 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <1.8 | <1.9 | <1.8 | <2.0 | <1.9 |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | 40 | 36 | 31 | 43 | 45 | 38 | 38 | 30 | 28 | 30 | 28 | 29 | 30 | 29 | 30 | 13 | 14 |
| Perfluorodecanoic acid (PFDA) | ng/L | 1.4 J | 1.6 J | <2.0 B* | <2.0 B* | 1.4 J | 0.68 J | 0.71 J | 0.51 J | <2.0 | 0.51 J | <2.0 | <1.9 | 1.0 J | <1.9 | 1.0 J | <2.0 | <1.9 |
| LHA Combined (PFOS + PFOA) | ng/L | 41 J | 38 J | 31 B† | 43 B† | 46 J | 39 J | 39 J | 31 J | 28 ‡ | 31 J | 28 ‡ | 29 ‡ | 31 J | 29 ‡ | 31 J | 13 ‡ | 14 ‡ |

Notes:

- DEC Alaska Department of Environmental Conservation
- DUP Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- < No applicable regulatory limit exists for the associated analyte.
- Analyte was not detected; reported as less than the Reporting Limit (RL).
- Bold** Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
- J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.
- B* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- ‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Units | PW-402 | | | PW-403 | | | PW-405 | | | | |
|---|-------|---------|---------|--------|---------|--------------|--------|---------|---------|--------|--------|---------|
| | | 9/25/18 | 3/7/19 | 6/8/19 | 9/25/18 | 6/8/2019 DUP | 6/8/19 | 9/25/18 | 12/8/18 | 3/7/19 | 3/7/19 | 6/8/19 |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | 36 | 30 | 22 | 41 | 30 | 30 | 44 | 27 | 28 | 27 | 20 |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | -- | -- | -- | -- | -- | -- | <9.3 B* | -- | -- | -- |
| Perfluorooctanoic acid (PFHpA) | ng/L | 3.3 | 4.4 | 2.9 | 3.4 | 2.8 | 3.1 | 4.1 | 4.2 J | 2.8 | 2.3 | 2.3 |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <3.8 | <2.0 | <2.0 | <2.0 |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | 3.7 | 2.2 | 1.7 J | 5.7 | 3.1 | 3.2 | 3.8 | 2.0 J | 2.8 | 2.8 | 1.7 J |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | -- | -- | -- | -- | -- | -- | <3.8 | -- | -- | -- |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | -- | -- | -- | -- | -- | -- | <3.8 | -- | -- | -- |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | -- | -- | -- | -- | -- | -- | <3.8 | -- | -- | -- |
| Perfluorotridecanoic acid (PFTeA) | ng/L | -- | -- | -- | -- | -- | -- | -- | <3.8 | -- | -- | -- |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | -- | -- | -- | -- | -- | -- | <3.8 | -- | -- | -- |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | ng/L | -- | -- | -- | -- | -- | -- | -- | <15 | -- | -- | -- |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | ng/L | -- | -- | -- | -- | -- | -- | -- | <15 | -- | -- | -- |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ng/L | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | 72 | 100 | 92 | 83 | 67 | 65 | 86 | 106 | 78 | 76 | 66 |
| Perfluorooctanoic acid (PFOA) | ng/L | 3.4 | <2.2 B* | 1.5 J | 3.3 | <2.9 B* | 2.6 | 3.9 | <17 B* | 2.7 | 2.5 | <2.0 B* |
| LHA Combined (PFOS + PFOA) | ng/L | 75 | 100 B*† | 94 J | 86 | 67 B*† | 68 | 90 | 106 B*† | 81 | 79 | 66 B*† |

Notes:

- DEC Alaska Department of Environmental Conservation
- DUP Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- < No applicable regulatory limit exists for the associated analyte.
- Analyte was not detected; reported as less than the Reporting Limit (RL).
- Bold** Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
- J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.
- B* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- † Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Units | PW-406 | | | | | PW-408 | | | | | PW-413 | | PW-414 | |
|--|-------|---------|---------|--------------|--------|---------|---------|---------|--------|--------|---------|--------|--------|--------|--|
| | | 9/25/18 | 12/7/18 | 3/7/2019 DUP | 3/7/19 | 6/8/19 | 9/26/18 | 12/8/18 | 3/7/19 | 6/7/19 | 9/27/18 | 6/8/19 | 9/1/20 | | |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | 36 | 24 | 28 | 30 | 24 | 30 | 21 | 22 | 28 | <2.0 | 2.1 | <1.9 | | |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | 12 JH* | -- | -- | -- | -- | 8.7 | -- | -- | -- | -- | <1.9 | | |
| Perfluorooctanoic acid (PFHpA) | ng/L | 5.2 | 5.4 J | 4.3 | 4.8 | 3.1 | 4.8 | 3.2 J | 3.9 | 3.0 | <2.0 | <2.0 | <1.9 | | |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <3.8 | <2.0 | <2.0 | <2.0 | <2.0 | <3.8 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | | |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | 2.6 | 2.0 J | 2.2 | 2.3 | 2.7 | 2.1 | <3.8 | 2.0 | 2.4 | <2.0 | <2.0 | <1.9 | | |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | <3.8 | -- | -- | -- | -- | <3.8 | -- | -- | -- | -- | <1.9 | | |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | <3.8 | -- | -- | -- | -- | <3.8 | -- | -- | -- | -- | <1.9 | | |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | <3.8 | -- | -- | -- | -- | <3.8 | -- | -- | -- | -- | <1.9 | | |
| Perfluorotridecanoic acid (PFTeA) | ng/L | -- | <3.8 | -- | -- | -- | -- | <3.8 | -- | -- | -- | -- | <1.9 | | |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | <3.8 | -- | -- | -- | -- | <3.8 | -- | -- | -- | -- | <1.9 | | |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | ng/L | -- | <15 | -- | -- | -- | -- | <15 | -- | -- | -- | -- | <1.9 | | |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | ng/L | -- | <15 | -- | -- | -- | -- | <15 | -- | -- | -- | -- | <1.9 | | |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | <1.9 | | |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUs) | ng/L | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | <1.9 | | |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | <1.9 | | |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | <1.9 | | |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | 150 | 113 | 94 | 92 | 74 | 130 | 115 | 97 | 88 | <2.0 | 2.3 | 1.2 J | | |
| Perfluorooctanoic acid (PFOA) | ng/L | 3.3 | <13 B* | 5.6 J* | 8.9 J* | <2.1 B* | 2.5 | 2.6 J | 2.5 | 2.7 | <2.0 | <2.0 | <1.9 | | |
| LHA Combined (PFOS + PFOA) | ng/L | 153 | 113 B*† | 100 J* | 101 J* | 74 B*† | 133 | 118 J | 100 | 91 | N/A | 2.3 ‡ | 1.2 ‡ | | |

Notes:

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- EPA United States Environmental Protection Agency
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- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- < No applicable regulatory limit exists for the associated analyte.
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- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- ‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Units | PW-415 | | | PW-418 | | | PW-419 | | | PW-430 | | PW-431 | | PW-432 | |
|--|-------|--------|----------|---------|---------|---------|---------|--------|--------|---------|----------------|----------|---------|----------|--------|--|
| | | 6/7/19 | 10/11/19 | 9/27/18 | 3/8/19 | 6/9/19 | 6/9/19 | 6/8/19 | 9/2/20 | 6/22/21 | 10/31/2018 DUF | 10/31/18 | 11/2/18 | 10/31/18 | | |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | 19 | 27 | 40 | 30 | 22 | 22 | 7.7 | 1.9 | 0.93 J | <2.0 | <2.0 | 5.4 | 2.5 | | |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | 15 | -- | -- | -- | -- | -- | 0.54 J | <2.0 | -- | -- | -- | -- | | |
| Perfluorooctanoic acid (PFHpA) | ng/L | 2.4 | 6.0 | 4.1 | 3.0 | 2.0 | 2.0 | 0.81 J | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | | |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | | |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | 1.4 J | 1.7 J | 3.9 | 2.6 | 2.2 | 2.1 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | | |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <2.0 | -- | -- | -- | -- | | |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <2.0 | -- | -- | -- | -- | | |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <2.0 | -- | -- | -- | -- | | |
| Perfluorotridecanoic acid (PFTeA) | ng/L | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <2.0 | -- | -- | -- | -- | | |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <2.0 | -- | -- | -- | -- | | |
| N-Methyl perfluorooctane sulfonamidecarboxylic acid (N-MeFOSAA) | ng/L | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <5.0 | -- | -- | -- | -- | | |
| N-Ethyl perfluorooctane sulfonamidecarboxylic acid (N-EtFOSAA) | ng/L | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <5.0 | -- | -- | -- | -- | | |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <2.0 | -- | -- | -- | -- | | |
| 11-Chlorooicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ng/L | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <2.0 | -- | -- | -- | -- | | |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <2.0 | -- | -- | -- | -- | | |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | <1.9 | -- | -- | -- | -- | -- | <1.9 | <4.0 | -- | -- | -- | -- | | |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | 67 | 120 | 74 | 89 | 63 | 66 | 14 | 3.4 | 1.5 J | <2.0 | <2.0 | 6.1 | 2.0 | | |
| Perfluorooctanoic acid (PFOA) | ng/L | 1.6 J | 2.4 | 3.4 | <3.1 B* | <2.0 B* | <2.0 B* | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | | |
| LHA Combined (PFOS + PFOA) | ng/L | 69 J | 122 | 77 | 89 B*† | 63 B*† | 66 B*† | 14 ‡ | 3.4 ‡ | 1.5 ‡ | N/A | N/A | 6.1 ‡ | 2.0 ‡ | | |

Notes:

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- DUP Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- < No applicable regulatory limit exists for the associated analyte.
- Analyte was not detected; reported as less than the Reporting Limit (RL).
- Bold** Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
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- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- ‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Analyte | Sample Name | PW-433 | PW-434 | PW-435 | PW-436 | PW-438 | PW-440 | PW-441 | PW-442 | PW-460 | PW-461 | PW-462 | PW-463 |
|--|-------------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|
| | Units | | | | | | | | | | | | |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | 1.3 J | 4.6 | <2.0 | <2.0 | 1.9 | <2.0 | 3.9 | 1.1 J | 1.7 J | 1.4 J | 18 | 6/8/19 |
| Perfluorohexanoic acid (PFHxA) | ng/L | -- | -- | -- | -- | 0.52 J | -- | -- | -- | -- | -- | 4.9 | -- |
| Perfluorheptanoic acid (PFHpA) | ng/L | <2.0 | 0.82 J | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | 1.6 J | 2.1 | 2.0 |
| Perfluorononanoic acid (PFNA) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <1.8 |
| Perfluorobutanesulfonic acid (PFBS) | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | 1.4 J | <2.0 | 1.6 J | 0.74 J |
| Perfluorodecanoic acid (PFDA) | ng/L | -- | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.8 |
| Perfluoroundecanoic acid (PFUnA) | ng/L | -- | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.8 |
| Perfluorododecanoic acid (PFDoA) | ng/L | -- | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.8 |
| Perfluorotridecanoic acid (PFTeA) | ng/L | -- | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.8 |
| Perfluorotetradecanoic acid (PFTeA) | ng/L | -- | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.8 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | ng/L | -- | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.8 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | ng/L | -- | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.8 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ng/L | -- | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.8 |
| 11-Chlorooctadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ng/L | -- | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.8 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | ng/L | -- | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.8 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | ng/L | -- | -- | -- | -- | <1.9 | -- | -- | -- | -- | -- | -- | <1.8 |
| Perfluorooctanesulfonic acid (PFOS) | ng/L | <2.0 | 2.8 | <2.0 | <2.0 | 3.7 | <2.0 | 1.4 J | <2.0 | <2.0 | 1.3 J | 48 | 68 |
| Perfluorooctanoic acid (PFOA) | ng/L | <2.0 | 0.85 J | <2.0 | <2.0 | <1.9 | <2.0 | <2.0 | <2.0 | <2.0 | 1.2 J | 1.8 J | 0.99 J |
| LHA Combined (PFOS + PFOA) | ng/L | N/A | 3.7 J | N/A | N/A | 3.7 ‡ | N/A | 1.4 J ‡ | N/A | N/A | 2.5 J | 50 J | 69 J |

Notes:

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- DUP Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- < No applicable regulatory limit exists for the associated analyte.
- Analyte was not detected; reported as less than the Reporting Limit (RL).
- Bold** Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
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- B* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- ‡ Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 11: Summary of Historical Water-Supply Well PFAS Results

| Sample Name | PW-464 | PW-465 | PW-466 |
|---|--------|---------|---------|
| Analyte | Units | | |
| Perfluorohexanesulfonic acid (PFHxS) | ng/L | | |
| Perfluorohexanoic acid (PFHxA) | 2.1 | 18 J* | 19 J* |
| Perfluorooctanoic acid (PFHpA) | 0.51 J | 9.7 J* | 11 J* |
| Perfluorodecanoic acid (PFDA) | <2.0 | 5.1 J* | 5.6 J* |
| Perfluorododecanoic acid (PFDDA) | <2.0 | <1.8 | 0.30 J* |
| Perfluorotetradecanoic acid (PFTeA) | <2.0 | 0.93 J* | 1.4 J* |
| Perfluorohexadecanoic acid (PFHxDA) | <2.0 | <1.8 | <1.8 |
| Perfluorooctadecanoic acid (PFODa) | <2.0 | <1.8 | <1.8 |
| Perfluorododecanoic acid (PFDDa) | <2.0 | <1.8 | <1.8 |
| Perfluorotetradecanoic acid (PFTeA) | <2.0 | <1.8 | <1.8 |
| Perfluorohexadecanoic acid (PFHxDA) | <2.0 | <1.8 | <1.8 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA) | <2.0 | <4.6 | <4.6 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA) | <2.0 | <1.8 | <1.8 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | <2.0 | <1.8 | <1.8 |
| 11-Chloroicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0 | <1.8 | <1.8 |
| 4,8-Dioxa-3H-perfluorononanoic acid (DONA) | <2.0 | <1.8 | <1.8 |
| Hexafluoropropylene oxide dimer acid (HFPO-DA) | <2.0 | <3.7 | <3.7 |
| Perfluorooctanesulfonic acid (PFOS) | 1.6 J | 100 J* | 110 J* |
| Perfluorodecanoic acid (PFDA) | <2.0 | 3.4 J* | 9.1 J* |
| LHA Combined (PFOS + PFOA) | 1.6 J† | 103 J* | 119 J* |

Notes:

- DEC Alaska Department of Environmental Conservation
- DUP Field-duplicate sample
- EPA United States Environmental Protection Agency
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter, equivalent to parts per trillion (ppt)
- < No applicable regulatory limit exists for the associated analyte.
- Analyte was not detected; reported as less than the Reporting Limit (RL).
- Bold** Detected concentration exceeds the DEC groundwater cleanup level reported in 18 AAC 75, Table C.
- J Estimated concentration, detected greater than the method detection limit (MDL) and less than the reporting limit (RL). Flag applied by the laboratory.
- B* Result is included in the same preparatory batch as a blank detection for the associated analyte. Flag applied by Shannon & Wilson, Inc. (*)
- J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)
- † Minimum concentration, the combined concentration includes one or more result that is not detected greater than the MDL.

Table 12 - Summary of Historical Water-Supply Well Selected PFAS Results and Trends

| Sample Name | Monitoring Network | Quarterly Event | PFBS ng/L | PFHpA ng/L | PFHxA ng/L | PFHxS ng/L | PFOA ng/L | PFOS ng/L | LHA Combined † ng/L |
|--------------------------------------|--------------------|--------------------------------------|----------------------------|----------------------------|-----------------|----------------------------|----------------------------|-------------------|------------------------|
| NPS Well | Annual | Aug-18 | 1.3 J | 1.8 J | — | 12 | 4.6 | 23 | 28 |
| | | Sep-18 | 1.2 J | 1.7 J | — | 11 | 4.3 | 22 | 26 |
| | | Mar-19 | 1.4 J | 1.9 J | — | 13 | 3.5 | 13 | 17 |
| | | Jun-19 | 1.5 J | 1.8 J | — | 14 | <3.4 B* | 16 | 16 B*‡ |
| | | Oct-19 | 1.0 J* | 1.4 J | 2.2 | 10 | 2.9 | 19 | 22 |
| | | Sep-20 | 0.85 J | 1.5 J | 4.3 | 7.4 | 2.0 | 10 | 12 |
| | | Mar-21 | 1.0 J | 2.2 | 5.1 | 10 | 2.7 | 7.1 | 9.8 |
| | | Trend: | Stable | No Trend | N/A | Possibly Decreasing | Decreasing | Decreasing | Decreasing |
| PW-010 | Quarterly | Aug-18 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A |
| | | Jun-19 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A |
| | | Oct-19 | <1.9 | <1.9 | 1.0 J | 2.9 | <1.9 | 2.2 | 2.2 ‡ |
| | | Sep-20 | <1.9 | <1.9 | <1.9 | 0.60 J | <1.9 | 0.88 J | 0.88 J‡ |
| | | Dec-20 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | 0.46 J | 0.46 J‡ |
| | | Mar-21 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | 0.79 J | 0.79 J‡ |
| | | Jun-21 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | N/A |
| | | Trend: | Stable | Stable | N/A | N/A | Stable | Stable | Stable |
| PW-012 | Quarterly | Aug-18 | 1.8 J | 0.81 J | — | 8.9 | 0.77 J | 7.7 | 8.5 J |
| | | Mar-19 | 1.5 J | 0.87 J | — | 11 | <2.0 B* | 25 | 25 B*‡ |
| | | Jun-19 | 1.1 J | <2.0 | — | 7.0 | 0.81 J | 14 | 15 J |
| | | Oct-19 | 0.99 J | 0.86 J | 2.8 | 9.3 | 0.74 J | 13 | 14 J |
| | | Sep-20 | 0.50 J | <1.9 | 1.2 J | 4.7 | <1.9 | 15 | 15 ‡ |
| | | Jan-21 | 0.59 J | 1.1 J | 3.3 | 8.5 | 0.47 J | 12 | 12 J |
| | | Mar-21 | <1.8 | <1.8 | 0.62 J | 1.5 J | <1.8 | 7.7 | 7.7 ‡ |
| | | Jun-21 | 0.27 J | <2.0 | <2.0 | 5.2 | <2.0 | 5.6 | 5.6 ‡ |
| Trend: | Decreasing | Possibly Increasing | Possibly Increasing | Possibly Decreasing | No Trend | Possibly Decreasing | Possibly Decreasing | | |
| PW-032 | Annual | Aug-18 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A |
| | | Sep-20 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | N/A |
| Insufficient Data for Trend Analysis | | | | | | | | | |
| PW-037 | Quarterly | Aug-18 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A |
| | | Mar-19 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A |
| | | Jun-19 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A |
| | | Oct-19 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | N/A |
| | | Sep-20 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | N/A |
| | | Dec-20 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | N/A |
| | | Mar-21 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | N/A |
| | | Jun-21 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | N/A |
| Trend: | Stable | Stable | Stable | Stable | Stable | Stable | Stable | | |
| PW-038 | Quarterly | Aug-18 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A |
| | | Mar-19 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A |
| | | Jun-19 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A |
| | | Oct-19 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | N/A |
| | | Sep-20 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | N/A |
| | | Dec-20 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | N/A |
| | | Mar-21 | <1.6 | <1.6 | <1.6 | <1.6 | <1.6 | <1.6 | N/A |
| | | Jun-21 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | N/A |
| Trend: | Stable | Stable | Stable | Stable | Stable | Stable | Stable | | |
| PW-039 | Quarterly | Aug-18 | <2.0 | <2.0 | — | <2.0 | 0.79 J | <2.0 | 0.79 J‡ |
| | | Mar-19 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A |
| | | Jun-19 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A |
| | | Oct-19 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | N/A |
| | | Sep-20 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | N/A |
| | | Dec-20 | <1.8 | <1.8 | 0.54 J | <1.8 | <1.8 | <1.8 | N/A |
| | | Mar-21 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | N/A |
| | | Jun-21 | <1.9 | <1.9 | 0.92 J | <1.9 | <1.9 | <1.9 | N/A |
| Trend: | Stable | Stable | N/A | Stable | N/A | Stable | N/A | | |
| PW-040 | Quarterly | Aug-18 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A |
| | | Mar-19 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A |
| | | Jun-19 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A |
| | | Oct-19 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | N/A |
| | | Sep-20 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | N/A |
| | | Dec-20 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | N/A |
| | | Mar-21 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | N/A |
| | | Jun-21 | <2.1 | <2.1 | <2.1 | <2.1 | <2.1 | <2.1 | N/A |
| Trend: | Stable | Stable | Stable | Stable | Stable | Stable | Stable | | |
| PW-047 | Annual | Aug-18 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A |
| | | Insufficient Data for Trend Analysis | | | | | | | |
| PW-059 | Quarterly | Aug-18 | <2.0 | <2.0 | — | 1.2 J | <2.0 | <2.0 | N/A |
| | | Mar-19 | <2.0 | <2.0 | — | 0.98 J | <2.0 | <2.0 | N/A |
| | | Jun-19 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A |
| | | Oct-19 | <1.9 | <1.9 | <1.9 | 1.1 J | <1.9 | <1.9 | N/A |
| | | Sep-20 | 0.75 J | <1.9 | <1.9 | 0.78 J | <1.9 | <1.9 | N/A |
| | | Dec-20 | 0.72 J | <1.9 | 0.55 J | 1.6 J | 0.70 J | 1.0 J | 1.7 J |
| | | Mar-21 | 1.3 J | 0.26 J | 1.1 J | 1.7 | 0.96 J | 1.6 J | 2.6 J |
| | | Jun-21 | 0.81 J | 0.33 J | 1.3 J | 2.1 | <2.0 | 1.4 J | 1.4 J‡ |
| Trend: | Decreasing | N/A | N/A | No Trend | N/A | N/A | N/A | | |
| PW-061 | Annual | Aug-18 | <2.0 | 1.3 J | — | 1.3 J | 3.8 | 1.4 J | 5.2 J |
| | | Sep-20 | 0.49 J | 0.82 J | 1.5 J | 0.85 J | 1.9 | 0.49 J | 2.4 J |
| Insufficient Data for Trend Analysis | | | | | | | | | |
| PW-074 | Annual | Sep-18 | <2.0 | <2.0 | — | 1.1 J | <2.0 | <2.0 | n/a |
| | | Insufficient Data for Trend Analysis | | | | | | | |

Table 12 - Summary of Historical Water-Supply Well Selected PFAS Results and Trends

| Sample Name | Monitoring Network | Quarterly Event | PFBS ng/L | PFHpA ng/L | PFHxA ng/L | PFHxS ng/L | PFOA ng/L | PFOS ng/L | LHA Combined † ng/L | |
|--------------------------------------|----------------------------------|--------------------------------------|----------------------------------|---------------|---------------|---------------|---------------------|--------------|------------------------|---------------------|
| PW-200 | POE, Quarterly | Sep-18 | 3.4 | 3.7 | - | 37 | 3.1 | 92 | 95 | |
| | | Dec-18 | 2.2 J | 2.8 J* | <7.7 B* | 23 | <7.7 B* | 98 | 98 B*‡ | |
| | | Mar-19 | 2.7 | 2.5 | - | 26 | 2.8 | 76 | 79 | |
| | | Jun-19 | 2.3 JL* | 3.0 JL* | - | 28 JL* | 2.1 JL* | 74 JL* | 76 JL* | |
| | | Oct-19 | 2.0 | 3.4 | 9.9 | 30 | 2.5 | 130 | 133 | |
| | | Aug-20 | 1.6 J | 5.2 | 12 | 25 | 2.0 | 98 | 100 | |
| | | Dec-20 | 0.84 J | 1.7 J | 3.3 | 7.6 | 1.1 J | 50 | 51 J | |
| | | Mar-21 | 1.2 J* | 3.8 | 7.4 | 12 | 1.3 J | 60 | 61 J | |
| | | Jun-21 | 0.68 J | 2.8 | 8.1 | 12 | 1.4 J | 45 | 46 J | |
| | | Trend: | | | Decreasing | No Trend | Stable | Decreasing | Decreasing | Possibly Decreasing |
| PW-203 | Quarterly | Sep-18 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A | |
| | | Mar-19 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A | |
| | | Jun-19 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A | |
| | | Oct-19 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | N/A | |
| | | Sep-20 | <1.9 | <1.9 | 0.67 J | 0.95 J | 0.50 J | 0.70 J | 1.2 J | |
| | | Dec-20 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | N/A | |
| | | Mar-21 | <1.7 | <1.7 | <1.7 | 0.90 J | <1.7 | 1.8 | 1.8 ‡ | |
| | | Jun-21 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | N/A | |
| | | Trend: | | | Stable | Stable | N/A | N/A | N/A | N/A |
| | | PW-204 | Removed, due to replacement well | Sep-18 | <2.0 | 0.93 J | — | 3.3 | <2.0 | 5.4 |
| Jun-19 | <2.0 | | | <2.0 | — | 2.4 | <2.0 | 4.7 | 4.7 ‡ | |
| Sep-20 | <1.9 | | | 0.47 J | 0.97 J | 3.2 | 0.75 J | 6.1 | 6.9 J | |
| Insufficient Data for Trend Analysis | | | | | | | | | | |
| PW-204.1 | Quarterly | Jun-21 | 2.4 | 3.8 | 11 | 30 | 2.8 | 49 | 52 | |
| Insufficient Data for Trend Analysis | | | | | | | | | | |
| PW-205 | Removed, due to replacement well | Jun-19 | 2.0 | <2.0 | — | 11 | 0.93 J | 9.0 | 9.9 J | |
| | | Oct-19 | 1.4 J | 0.63 J | 3.0 | 10 | 0.76 J | 10 | 11 J | |
| | | Insufficient Data for Trend Analysis | | | | | | | | |
| PW-205.1 | Quarterly | Jun-21 | 0.27 J | <2.1 | 0.78 J | 1.5 J | <2.1 | 2.2 | 2.2 ‡ | |
| Insufficient Data for Trend Analysis | | | | | | | | | | |
| PW-207 | Annual | Jun-19 | <2.0 | <2.0 | — | <2.0 | 1.0 J | <2.0 | 1.0 J‡ | |
| Insufficient Data for Trend Analysis | | | | | | | | | | |
| PW-208 | Removed, due to replacement well | Jun-19 | <2.0 | <2.0 | — | 2.5 | 0.80 J | 8.4 | 9.2 J | |
| | | Mar-21 | 0.33 JH* | <1.8 | 2.3 | 0.52 J | <1.8 | 1.6 J | 1.6 J‡ | |
| | | Insufficient Data for Trend Analysis | | | | | | | | |
| PW-211 | Quarterly | Sep-18 | <2.0 | 3.3 | — | 1.1 J | 15 | 9.1 | 24 | |
| | | Oct-19 | 1.4 J | 0.51 J | 0.83 J | <1.9 | 1.0 J | 1.0 J | 2.0 J | |
| | | Aug-20 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | 0.65 J | 0.65 J‡ | |
| | | Dec-20 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | 0.60 J | 0.60 J‡ | |
| | | Mar-21 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | N/A | |
| | | Jun-21 | <2.0 | <2.0 | <2.0 | 0.76 J | <2.0 | <2.0 | N/A | |
| | | Trend: | | | N/A | N/A | N/A | N/A | N/A | No Trend |
| PW-212 | Annual | Sep-18 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A | |
| | | Oct-19 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | N/A | |
| | | Insufficient Data for Trend Analysis | | | | | | | | |
| PW-218 | Annual | Nov-18 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A | |
| | | Dec-20 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | N/A | |
| | | Insufficient Data for Trend Analysis | | | | | | | | |
| PW-219 | Annual | Sep-18 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A | |
| | | Oct-19 | 1.2 J | 0.49 J | 0.74 J | <1.9 | 0.84 J | <1.9 | 0.84 J‡ | |
| | | Aug-20 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | N/A | |
| | | Insufficient Data for Trend Analysis | | | | | | | | |
| PW-221 | Quarterly | Nov-18 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A | |
| | | Jun-19 | <2.0 | <2.0 | — | <2.0 | <2.0 | <2.0 | N/A | |
| | | Oct-19 | <1.9 | <1.9 | 0.87 J | 2.1 | <1.9 | 2.4 | 2.4 ‡ | |
| | | Sep-20 | <2.0 | <2.0 | <2.0 | 0.86 J | <2.0 | 1.5 J | 1.5 J‡ | |
| | | Dec-20 | <2.0 | <2.0 | <2.0 | 1.3 J | <2.1 | 1.7 J | 1.7 J‡ | |
| | | Mar-21 | <1.8 | <1.8 | 0.52 J | 0.90 J | <1.8 | 2.1 | 2.1 ‡ | |
| | | Jun-21 | <2.0 | <2.0 | <2.0 | 0.60 J | <2.0 | 0.97 J | 0.97 J‡ | |
| | | Trend: | | | Stable | Stable | N/A | Decreasing | Stable | Stable |
| PW-230 | Annual | Oct-18 | <2.0 | <2.0 | — | 1.2 J | 1.1 J | <2.0 | 1.1 J‡ | |
| | | Sep-20 | <1.8 | <1.8 | <1.8 | 0.71 J | 1.0 J | 0.68 J | 1.7 J | |
| | | Insufficient Data for Trend Analysis | | | | | | | | |
| PW-240 | Annual | Nov-18 | <2.0 | <2.0 | — | 3.3 | <2.0 | <2.0 | n/a | |
| | | Sep-20 | <1.9 | <1.9 | <1.9 | 2.0 | <1.9 | 1.8 J | 1.8 J‡ | |
| | | Insufficient Data for Trend Analysis | | | | | | | | |
| PW-241 | Annual | Nov-18 | <2.0 | <2.0 | — | 6.1 | 0.98 J | 2.9 | 3.9 J | |
| Insufficient Data for Trend Analysis | | | | | | | | | | |
| PW-401 | Quarterly | Sep-18 | 2.4 | 1.6 J | — | 18 | 1.4 J | 40 | 41 J | |
| | | Oct-18 | 2.3 | 1.7 J | — | 20 | 1.6 J | 36 | 38 J | |
| | | Mar-19 | 1.8 J | 2.0 | — | 20 | <2.0 B* | 31 | 31 B*‡ | |
| | | Jun-19 | 1.2 J | 1.7 J | — | 15 | <2.0 B* | 43 | 43 B*‡ | |
| | | Oct-19 | 1.3 J | 1.8 J | 5.4 | 16 | 1.4 J | 45 | 46 J | |
| | | Sep-20 | 0.90 J | 1.3 J | 4.4 | 9.9 | 0.71 J | 38 | 39 J | |
| | | Dec-20 | <2.0 | 1.1 J | 2.8 | 6.9 | 0.51 J | 30 | 31 J | |
| | | Mar-21 | 0.74 J | 1.5 J | 4.4 | 7.7 | 1.0 J | 30 | 31 J | |
| | | Jun-21 | 0.28 J | 0.32 JH* | 1.2 J | 2.2 | <2.0 | 14 | 14 ‡ | |
| | | Trend: | | | Decreasing | Decreasing | Possibly Increasing | Decreasing | Stable | Decreasing |

Table 12 - Summary of Historical Water-Supply Well Selected PFAS Results and Trends

| Sample Name | Monitoring Network | Quarterly Event | PFBS | PFHpA | PFHxA | PFHxS | PFOA | PFOS | LHA Combined † |
|--------------------------------------|-------------------------------|-----------------|---------|--------|--------|--------|---------|-------|----------------|
| | | | ng/L | ng/L | ng/L | ng/L | ng/L | ng/L | ng/L |
| PW-414 | Annual | Jun-19 | <2.0 | <2.0 | — | 2.1 | <2.0 | 2.3 | 2.3 ‡ |
| | | Sep-20 | <1.9 | <1.9 | <1.9 | 0.74 J | <1.9 | 1.2 J | 1.2 J‡ |
| Insufficient Data for Trend Analysis | | | | | | | | | |
| PW-419 | Quarterly | Jun-19 | <2.0 | 0.81 J | — | 7.7 | <2.0 | 14 | 14 ‡ |
| | | Sep-20 | <1.9 | <1.9 | 0.54 J | 1.9 | <1.9 | 3.4 | 3.4 ‡ |
| | | Jun-21 | <2.0 | <2.0 | <2.0 | 0.93 J | <2.0 | 1.5 J | 1.5 J‡ |
| Insufficient Data for Trend Analysis | | | | | | | | | |
| PW-438 | Annual | Aug-20 | <1.9 | <1.9 | 0.52 J | 1.9 | <1.9 | 3.7 | 3.7 ‡ |
| Insufficient Data for Trend Analysis | | | | | | | | | |
| PW-462 | Removed, due to well category | Jun-19 | 1.6 J | 2.1 | — | 18 | 1.8 J | 48 | 50 J |
| | | Sep-20 | 0.74 J* | 2.0 J* | 4.9 J* | 13 J* | 0.99 J* | 68 J* | 69 J* |
| Insufficient Data for Trend Analysis | | | | | | | | | |

Notes: Table includes the results of Mann-Kendall nonparametric trend analysis with Monitoring and Remediation Optimization System (MAROS) classification. Trend analyses requires at least four samples for the data set in order to provide a meaningful statistical assessment. Sample locations with less than four data points are omitted from statistical analysis.

Sample locations with greater than or equal to 50 percent non-detect results are omitted from statistical analysis.

ng/L nanograms per liter, equivalent to parts per trillion

PFBS perfluorobutanesulfonic acid

PFHpA perfluoroheptanoic acid

PFHxA perfluorohexanoic acid

PFHxS perfluorohexanesulfonic acid

PFOA perfluorooctanoic acid

PFOS perfluorooctane sulfonic acid

† U.S. Environmental Protection Agency (EPA) Lifetime Health Advisory (LHA) level is 70 ng/L for PFOS and PFOA combined.

< Analyte was not detected; reported as < the laboratory reporting limit (RL)

— Analyte not requested

J Estimated concentration, detected greater than the detection limit (DL) and less than the limit of quantitation (LOQ). Flag applied by the laboratory.

J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

JL* Estimated concentration, biased low due to quality control failures. Flag applied by Shannon & Wilson, Inc.

JH* Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson, Inc.

B* Result is considered not detected due to quality control failures; see checklist for details. Flag applied by Shannon & Wilson, Inc.

N/A Not applicable. The LHA Combined concentration could not be calculated because PFOS and PFOA were not detected in the project sample or there is insufficient data or a lack of quantifiable results (less than 50 percent) from which to conduct a Mann-Kendall analysis.

‡ Minimum concentration, the LHA Combined concentration includes one or more result that is not detected greater than the MDL.

Table 13 - Summary of Historical Monitoring Well Selected PFAS Results and Trends

| Sample Name | Quarterly Event | PFBS ng/L | PFHpA ng/L | PFHxA ng/L | PFHxS ng/L | PFNA ng/L | PFOA ng/L | PFOS ng/L | LHA Combined † ng/L |
|-------------|-----------------|---------------------|---------------|---------------|---------------|--------------|--------------|--------------|---------------------------|
| MW-1-15 | Oct-19 | <1.8 | <1.8 | <1.8 | 1.1 J | <1.8 | <1.8 | <1.8 | N/A |
| | Aug-20 | 0.33 J | <1.7 | <1.7 | <1.7 B* | <1.7 | <1.7 | <1.7 | N/A |
| | Dec-20 | 0.20 J | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | N/A |
| | Mar-21 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | N/A |
| | Jun-21 | <1.7 | <1.7 | <1.7 | 0.61 J | <1.7 | <1.7 | 1.4 J | 1.4 J‡ |
| | Trend: | N/A | Stable | Stable | Stable | N/A | Stable | Stable | N/A |
| MW-1-40 | Oct-19 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | N/A |
| | Aug-20 | <1.7 | <1.7 | <1.7 | <1.7 B* | <1.7 | <1.7 | <1.7 | N/A |
| | Dec-20 | <1.8 | <1.8 | <1.8 | 1.1 J | <1.8 | <1.8 | 0.56 J* | 0.56 J‡ |
| | Mar-21 | <1.7 | <1.7 | <1.7 | 0.68 J | <1.7 | <1.7 | <1.7 | N/A |
| | Jun-21 | <1.8 | <1.8 | <1.8 | 0.68 J | <1.8 | <1.8 | <1.8 | N/A |
| | Trend: | Stable | Stable | Stable | Decreasing | Stable | Stable | N/A | N/A |
| MW-2-20 | Oct-19 | <1.9 | 0.95 J | 4.6 | 3.9 | <1.9 | 1.5 J | 3.8 | 5.3 J |
| | Sep-20 | 3.0 | 37 | 84 | 32 | 4.0 | 36 | 260 | 296 |
| | Dec-20 | 9.5 | 54 | 63 | 64 | 4.0 | 67 | 250 | 317 |
| | Mar-21 | 2.4 | 26 | 31 | 100 | 4.0 | 78 | 250 | 328 |
| | Jun-21 | 2 | 27 | 48 | 120 | 15 | 32 | 450 | 482 |
| | Trend: | Stable | No Trend | Stable | Increasing | Increasing | No Trend | Stable | Increasing |
| MW-2-30 | Oct-19 | 1.5 J | <1.8 | <1.8 | 1.4 J | <1.8 | <1.8 | <1.8 | N/A |
| | Sep-20 | 1.3 J | <1.7 | <1.7 | <1.7 B* | <1.7 | <1.7 | <1.7 | N/A |
| | Dec-20 | 1.4 J | 0.70 J | <1.8 | <1.8 | 0.48 J | 1.4 J | <1.8 | 1.4 J‡ |
| | Mar-21 | 0.91 J | <1.8 | <1.8 | 0.54 J | <1.8 | <1.8 | <1.8 | N/A |
| | Jun-21 | 1.2 J | <1.8 | 0.60 J | <1.8 | <1.8 | <1.8 | <1.8 | N/A |
| | Trend: | Stable | N/A | N/A | N/A | N/A | N/A | Stable | N/A |
| MW-3-15 | Oct-19 | <1.8 | <1.8 | <1.8 | 3.7 | <1.8 | <1.8 | 9.5 | 9.5 ‡ |
| | Sep-20 | 0.57 J | 0.44 J | 1.0 J | 4.5 | <1.7 | <1.7 | 6.7 | 6.7 ‡ |
| | Dec-20 | 1.2 J | 2.7 | 5.1 | 3.6 | <1.8 | 0.94 J | 5.1 | 6.0 J |
| | Mar-21 | 0.24 J* | <1.7 J* | 0.87 J* | 1.9 J* | <1.7 J* | <1.7 J* | 3.1 J* | 3.1 J‡ |
| | Jun-21 | <1.7 | <1.7 | 0.62 J | 1.2 J | <1.7 | <1.7 | 2.0 | 2.0 ‡ |
| | Trend: | Stable | N/A | Stable | Decreasing | Stable | N/A | Decreasing | Decreasing |
| MW-3-40 | Oct-19 | 3.2 | 1.1 J | 5.3 | 32 | <1.9 | 2.8 | 9.0 J* | 11 J* |
| | Sep-20 | 1.9 | 0.63 J | 2.9 | 19 | <1.7 | 2.2 | 12 | 14 |
| | Dec-20 | 1.2 J | 0.43 J | 1.6 J | 14 | <1.8 | 1.3 J | 13 J* | 14 J* |
| | Mar-21 | 0.93 J | <1.7 | 2.4 | 17 | <1.6 | 1.7 | 13 | 15 |
| | Jun-21 | 1.1 J | 0.43 J | 2.1 | 15 | <1.7 | 1.5 J | 15 | 17 J |
| | Trend: | Decreasing | Stable | Stable | Stable | Stable | Stable | Increasing | Increasing |
| MW-4-20 | Oct-19 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | <1.9 | N/A |
| | Sep-20 | 0.32 J | 0.28 J | <1.7 | <1.7 B* | <1.7 | <1.7 | <1.7 | N/A |
| | Dec-20 | 0.46 J* | <1.8 | <1.8 | 0.65 J | <1.8 | <1.8 | <1.8 | N/A |
| | Mar-21 | <1.7 | <1.7 | <1.7 | 0.50 J | <1.7 | <1.7 | <1.7 | N/A |
| | Jun-21 | 0.19 J | <1.7 | <1.7 | 0.63 J | <1.7 | <1.7 | <1.7 | N/A |
| | Trend: | Stable | N/A | Stable | Decreasing | Stable | Stable | Stable | N/A |
| MW-5-20 | Oct-19 | 0.31 J | <1.9 | <1.9 | 3.1 | <1.9 | <1.9 | <1.9 | N/A |
| | Sep-20 | 0.29 J | 0.22 J | 0.76 J | <1.7 B* | <1.7 | <1.7 | 2.0 | 2.0 ‡ |
| | Jan-21 | 0.44 J | <1.8 | <1.8 | 1.3 J | <1.8 | 1.0 J | 1.7 J | 2.7 J |
| | Mar-21 | 0.45 J | <1.7 | 0.89 J | 1.4 J | 0.65 J | 0.87 J | 2.7 | 3.6 J |
| | Jun-21 | 0.45 J | 0.96 J | 2.1 | 2.8 | 0.51 J | 2.1 | 3.5 | 5.6 |
| | Trend: | Probably Increasing | N/A | No Trend | Stable | N/A | Stable | No Trend | Increasing |
| MW-6-20 | Oct-19 | <1.9 | <1.9 | <1.9 | 2.9 | <1.9 | <1.9 | <1.9 | N/A |
| | Sep-20 | 0.30 J | <1.7 | <1.7 | <1.8 B* | <1.7 | <1.7 | 0.91 J | 0.91 J‡ |
| | Jan-21 | 0.37 J | 0.29 J* | <1.7 | 2.7 | <1.8 | <1.8 | 1.3 J* | 1.3 J‡ |
| | Mar-21 | 0.30 J* | <1.8 J* | <1.8 J* | 1.0 J* | <1.8 | <1.8 | 1.5 J* | 1.5 J‡ |
| | Jun-21 | <1.7 | <1.7 | <1.7 | 1.1 J | <1.7 | <1.7 | <1.7 | N/A |
| | Trend: | Stable | N/A | Stable | Stable | Stable | Stable | No Trend | No Trend |
| MW-7-20 | Oct-19 | 0.35 J | 0.56 J | 1.1 J | 1.5 JH* | <1.9 | 1.4 J | 1.3 J | 2.7 J |
| | Sep-20 | 0.45 J | 0.84 J | 1.2 J | <1.7 B* | <1.7 | 2.7 | 3.9 | 6.6 |
| | Dec-20 | 0.43 J | 0.91 J | 1.2 J | 1.1 J | <1.9 | 1.3 J | 4.8 | 5.9 J |
| | Mar-21 | <1.7 | 1.0 J | 1.3 J | 0.98 J | <1.7 | 2.3 | 5.0 | 7.3 |
| | Jun-21 | 0.46 J | 0.96 J | 1.2 J | 1.0 J | <1.8 | 6.7 | 6.2 | 13 |
| | Trend: | No Trend | Increasing | No Trend | Stable | Stable | No Trend | Increasing | Increasing |
| MW-8-20 | Oct-19 | <1.9 | <1.9 | <1.9 | <1.9 B* | <1.9 | <1.9 | 0.81 J | 0.81 J‡ |
| | Sep-20 | <1.7 | <1.7 | <1.7 | <1.7 B* | <1.7 | <1.7 | <1.7 | N/A |
| | Jan-21 | <1.7 | <1.7 | <1.7 | 0.62 J | <1.7 | <1.7 | <1.7 | N/A |
| | Mar-21 | <1.8 J* | <1.8 J* | <1.8 J* | 0.57 J* | <1.8 J* | <1.8 J* | <1.8 J* | N/A |
| | Jun-21 | <1.7 | 0.23 J | <1.7 | 0.49 J | <1.7 | <1.7 | <1.7 | N/A |
| | Trend: | Stable | N/A | Stable | Decreasing | Stable | Stable | N/A | N/A |
| MW-9-30 | Oct-19 | 1.2 J | 2.2 | 5.5 | 15 B | <1.9 | 1.5 J | 97 | 99 J |
| | Sep-20 | 1.6 J | 6.0 | 16 | 23 | <1.7 | 2.3 | 88 | 90 |
| | Dec-20 | 0.66 J | 2.0 | 4.6 | 11 | <1.8 | 1.0 J | 92 | 93 J |
| | Mar-21 | 1.2 J | 3.0 | 8.9 | 15 | <1.8 | 1.0 J | 97 | 98 J |
| | Jun-21 | 0.79 J | 3.2 | 7.0 | 15 | <1.8 | 1.1 J | 95 | 96 J |
| | Trend: | Stable | No Trend | Stable | Stable | Stable | Stable | No Trend | Stable |
| MW-10-20 | Oct-19 | 0.75 J | 2.3 | 5.6 | 12 | <1.9 | 1.2 J | 49 | 50 J |
| | Sep-20 | 0.64 J | 4.5 | 11 | 13 | 0.42 J | 2.6 | 140 | 143 |
| | Jan-21 | 0.42 J | 1.8 | 5.3 | 5.4 | <1.8 | <1.8 | 39 | 39 ‡ |
| | Mar-21 | 1.3 J* | 4.8 | 16 J* | 17 J* | <1.7 | 1.9 | 37 J* | 39 J* |
| | Jun-21 | 0.87 J | 5.6 | 15 | 21 | <1.8 | 2.0 | 95 | 97 |
| | Trend: | No Trend | No Trend | No Trend | No Trend | N/A | No Trend | Stable | Stable |

Table 13 - Summary of Historical Monitoring Well Selected PFAS Results and Trends

| Sample Name | Quarterly Event | PFBS ng/L | PFHpA ng/L | PFHxA ng/L | PFHxS ng/L | PFNA ng/L | PFOA ng/L | PFOS ng/L | LHA Combined † ng/L |
|-------------|-----------------|-----------------|---------------|----------------------------|----------------------------|---------------|-----------------|-----------------|---------------------------|
| MW-11-15 | Oct-19 | 1.3 J | 4.8 | 18 | 12 B | 1.0 J | 1.9 | 39 | 41 |
| | Sep-20 | 2.2 | 7.0 | 27 | 15 | 1.4 J | 2.4 | 76 | 78 |
| | Dec-20 | 35 | 19 | 180 | 830 | 2.2 | 92 | 6,100 | 6,192 |
| | Mar-21 | 1.4 J | 3.0 | 15 | 20 | 0.62 J | 2.2 | 210 | 212 |
| | Jun-21 | 1.0 J | 3.0 | 18 | 13 | 0.88 J | 2.1 | 140 | 142 |
| | Trend: | No Trend | Stable | No Trend | No Trend | Stable | No Trend | No Trend | No Trend |
| MW-12-10 | Oct-19 | 3.1 | 10 | 17 | 52 B | 0.83 J | 8.4 | 180 | 188 |
| | Sep-20 | 1.8 | 15 | 17 | 52 | 0.97 J | 9.8 | 210 | 220 |
| | Dec-20 | 0.71 J | 15 | 13 | 31 | 2.6 | 9.5 | 100 | 110 |
| | Mar-21 | 0.52 J | 3.8 | 4.8 | 9.4 | 0.64 J | 2.9 | 36 | 39 |
| | Jun-21 | 0.61 J | 5.5 | 5.6 | 14 | 0.66 J | 2.6 | 50 | 53 |
| | Trend: | Stable | Stable | Probably Decreasing | Probably Decreasing | Stable | Stable | Stable | Stable |

Notes: Table includes the results of Mann-Kendall nonparametric trend analysis with Monitoring and Remediation Optimization System (MAROS) classification. Trend analyses requires at least four samples for the data set in order to provide a meaningful statistical assessment. Sample locations with less than four data points are omitted from statistical analysis.

Sample locations with greater than or equal to 50 percent non-detect results are omitted from statistical analysis.

ng/L nanograms per liter, equivalent to parts per trillion

PFBS perfluorobutanesulfonic acid

PFHpA perfluoroheptanoic acid

PFHxA perfluorohexanoic acid

PFHxS perfluorohexanesulfonic acid

PFNA perfluorononanoic acid

PFOA perfluorooctanoic acid

PFOS perfluorooctane sulfonic acid

† U.S. Environmental Protection Agency (EPA) Lifetime Health Advisory (LHA) level is 70 ng/L for PFOS and PFOA combined.

< Analyte was not detected; reported as < the laboratory reporting limit (RL)

— Analyte not requested

J Estimated concentration, detected greater than the detection limit (DL) and less than the limit of quantitation (LOQ). Flag applied by the laboratory.

J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

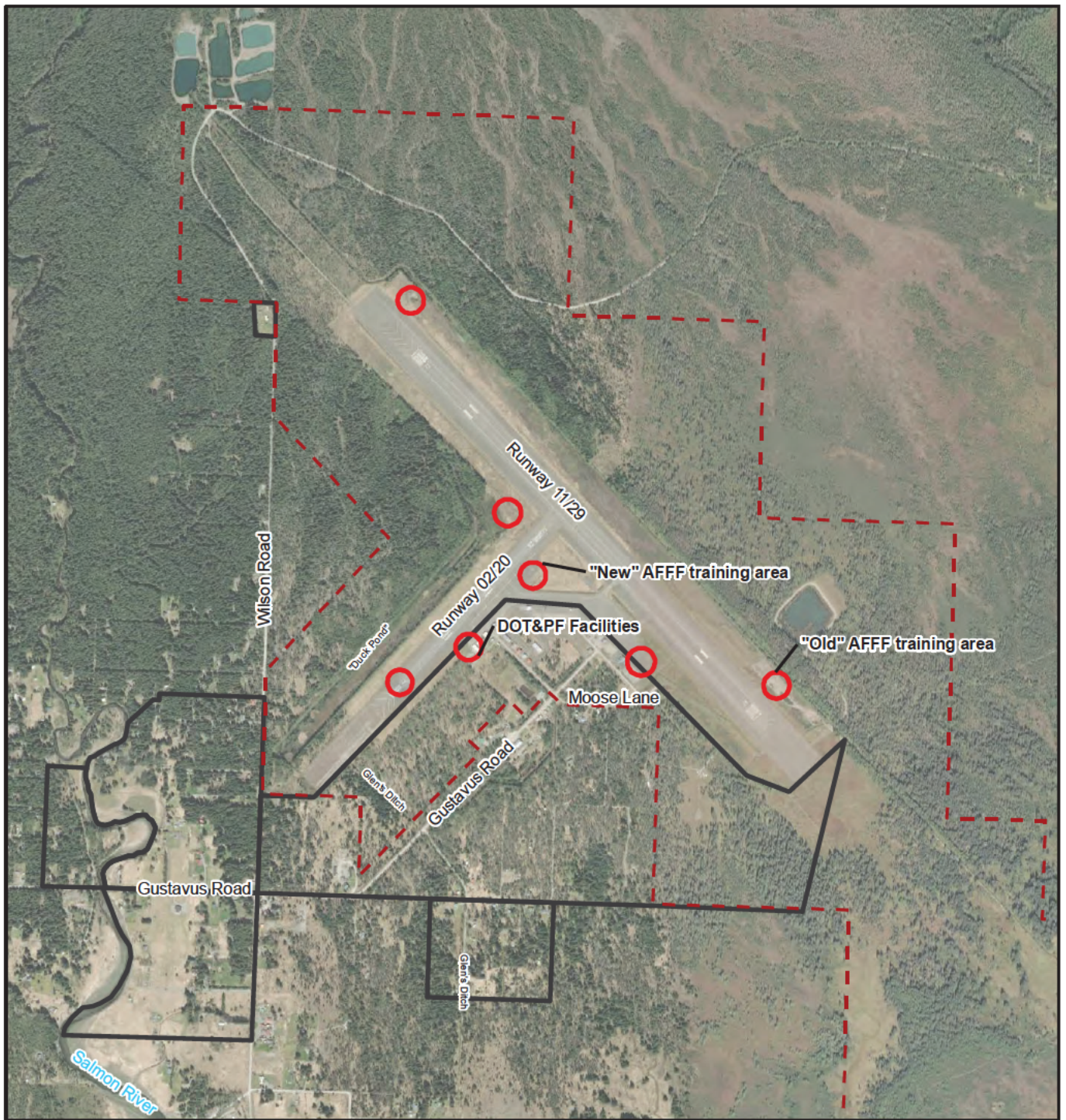
JL* Estimated concentration, biased low due to quality control failures. Flag applied by Shannon & Wilson, Inc.

JH* Estimated concentration, biased high due to quality control failures. Flag applied by Shannon & Wilson, Inc.

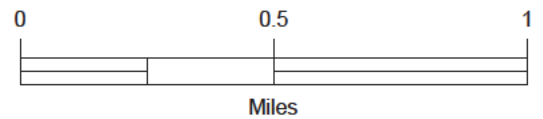
B* Result is considered not detected due to quality control failures; see checklist for details. Flag applied by Shannon & Wilson, Inc.

N/A Not applicable. The LHA Combined concentration could not be calculated because PFOS and PFOA were not detected in the project sample or there is insufficient data or a lack of quantifiable results (less than 50 percent) from which to conduct a Mann-Kendall analysis.

‡ Minimum concentration, the LHA Combined concentration includes one or more result that is not detected greater than the MDL.



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

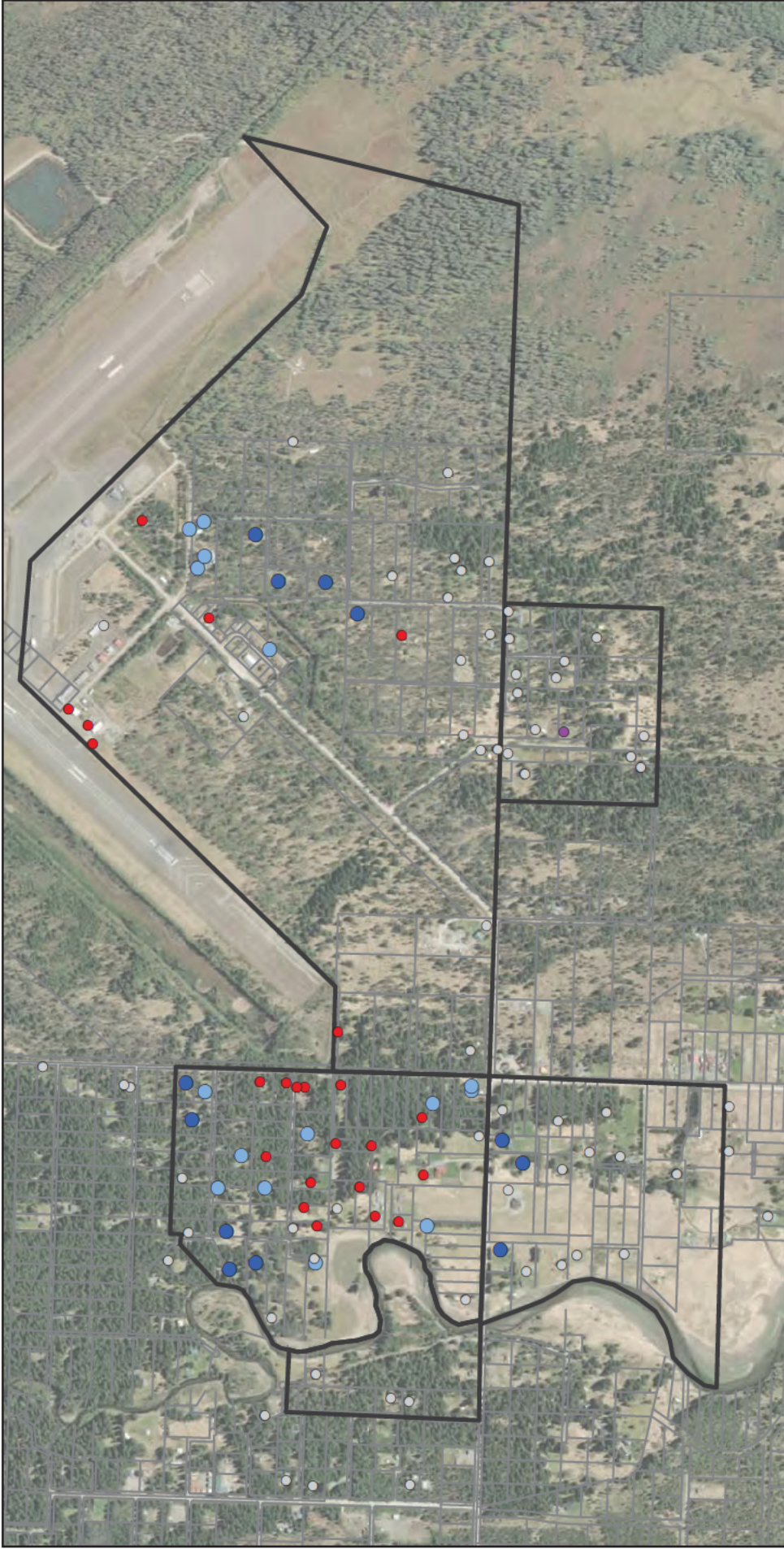


LEGEND

- - - Airport Property Boundary
- Well Search and Sampling Boundaries
- Potential and Known AFFF Use Areas



| | |
|--|------------|
| Gustavus Airport PFAS Site Characterization Report Gustavus, Alaska | |
| SITE MAP | |
| December 2022 | 102599-018 |
| SHANNON & WILSON, INC. <small>GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS</small> | |
| Figure 1 | |



Imagery provided by Maxar Products. Dynamic Mosaic © 2020 Maxar Technologies Inc., Alaska

- Quarterly
- Annually
- Affected property, not monitored
- Affected, DEC project site
- Not part of monitoring program*

Legend

- Well Search Areas
- Property Lines

* Location does not meet monitoring criteria due to well category or results

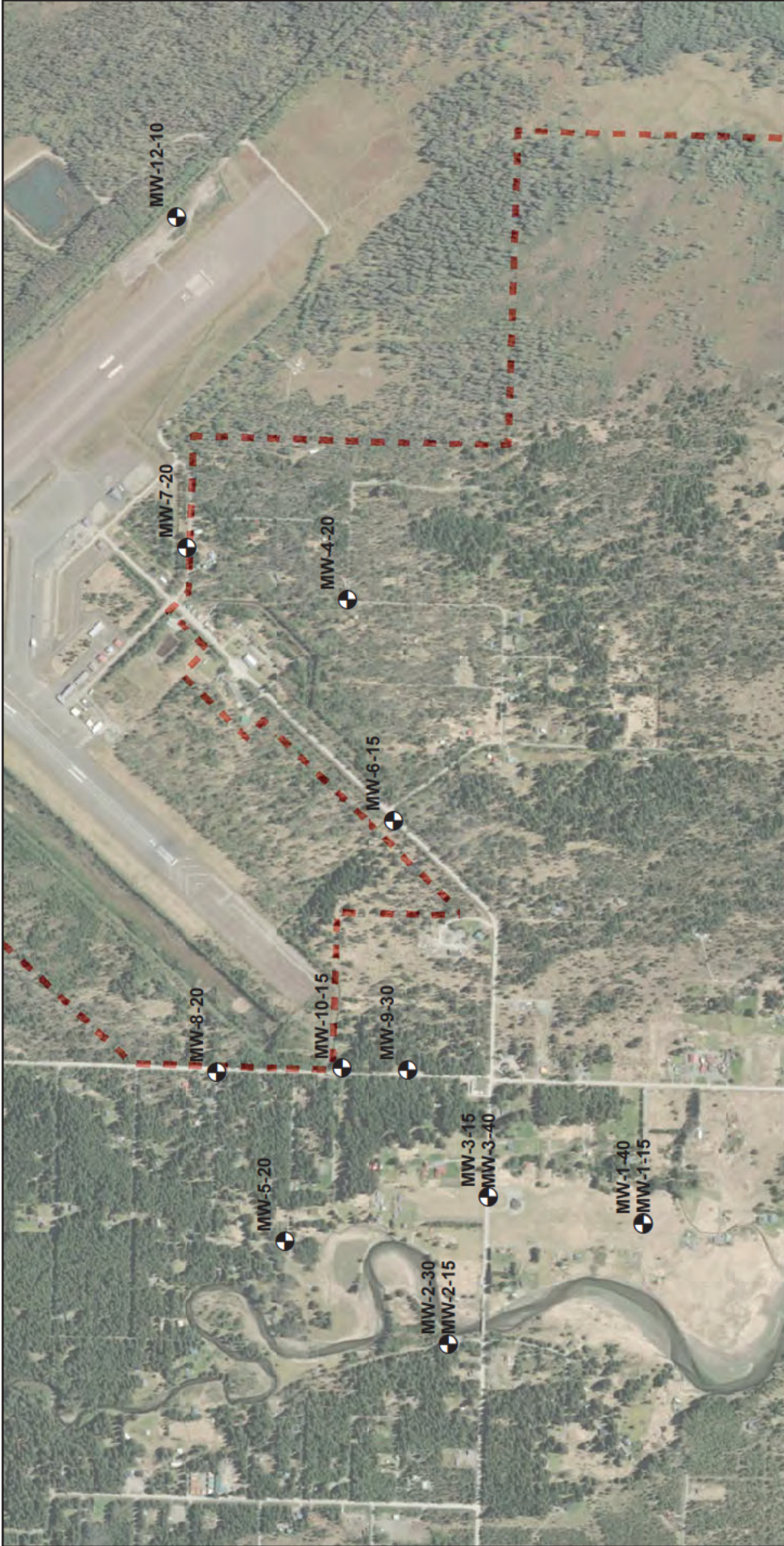
Gustavus Airport
Gustavus, Alaska

QUARTERLY & ANNUAL WATER-SUPPLY WELL SAMPLING LOCATIONS

December 2022 102599-018



Figure 2




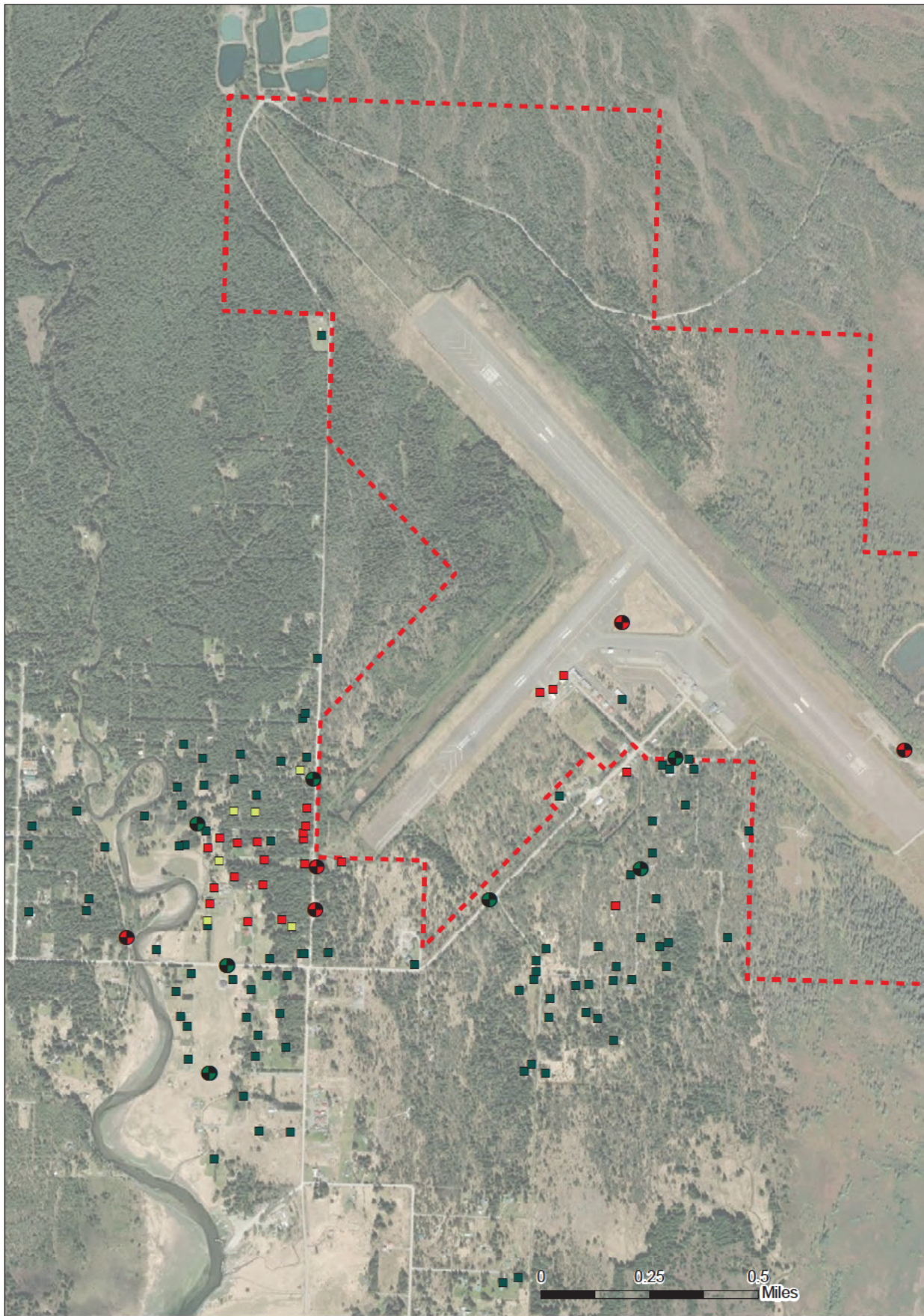
Imagery provided by Maxar Products. Dynamic Mosaic © 2020 Maxar Technologies Inc., Alaska



Legend

- Monitoring well
- - - Airport Property Boundary

| | |
|---|------------|
| Gustavus Airport Gustavus, Alaska | |
| MONITORING WELL LOCATIONS | |
| December 2022 | 102599-018 |
|  SHANNON & WILSON, INC. <small>GEO-TECHNICAL AND ENVIRONMENTAL CONSULTANTS</small> | |
| Figure 3 | |



Map source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

| LEGEND | |
|--------------------------------|---|
| Water Supply Wells | Monitoring Wells - - - Airport Property Boundary |
| ■ ≤17 ng/L | ● ≤17 ng/L |
| ■ 18 to 69 ng/L | ● 18 to 69 ng/L |
| ■ ≥70 ng/L (over EPA advisory) | ● ≥70 ng/L |

| | |
|---|-----------------|
| Gustavus - DOT & PF PFAS Gustavus, Alaska | |
| MAXIMUM PFOS+PFOA RESULTS as of AUGUST 2021 | |
| December 2022 | 102599-018 |
| SHANNON & WILSON, INC. GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS | Figure 4 |